

VOLUME 21

DECEMBER, 1921

NUMBER 7

# Roosevelt Wild Life Bulletin

(VOLUME I, NUMBER 1)

OF

The Roosevelt Wild Life Forest Experiment Station

OF

THE NEW YORK STATE COLLEGE OF FORESTRY

AT

SYRACUSE UNIVERSITY



Published Quarterly by the University, Syracuse, New York

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## ANNOUNCEMENT

The Serial Publications of The Roosevelt Wild Life Forest Experiment Station consist of the following:

1. Roosevelt Wild Life Bulletin.
2. Roosevelt Wild Life Annals.

The *Bulletin* is intended to include papers of general and popular interest on the various phases of forest wild life, and the *Annals* those of a more technical nature or having a less widespread interest.

These publications are edited in cooperation with the College Committee on Publications.

Exchanges are invited.

CHARLES C. ADAMS

Director and Editor

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THEODORE ROOSEVELT  
1858-1919

These are Roosevelt's words on wild life research: "There must be ample research in the laboratory in order even to present those problems, not to speak of solving them, and there can be no laboratory study without the accumulation of masses of dry facts and specimens.

"I also mean that from now on it is essential to recognize that the best scientific men must largely work in the great out-of-doors laboratory of nature. It is only such outdoors work which will give us the chance to interpret aright the laboratory observations."

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\* Including only those who have made field investigations and whose reports are now in preparation.

\*\* Resigned as Station Ichthyologist October 1, 1921.

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## THE RELATION OF FORESTS AND FORESTRY TO HUMAN WELFARE

"Forests are more than trees. They are rather land areas on which are associated various forms of plant and animal life. The forester must deal with all. Wild life is as essentially and legitimately an object of his care as are water, wood, and forage. Forest administration should be planned with a view to realizing all possible benefits from the land areas handled. It should take account of their indirect value for recreation and health as well as their value for the production of salable material; and of their value for the production of meat, hides, and furs of all kinds as well as for the production of wood and the protection of water supplies.

"Unquestionably the working out of a program of wild life protection which will give due weight to all the interests affected is a delicate task. It is impossible to harmonize the differences between the economic, the esthetic, the sporting, and the commercial viewpoint. Nevertheless, the practical difficulties are not so great as they appear on the surface."

HENRY S. GRAVES,  
Former Chief Forester, U. S. Forest Service.  
*Recreation*, Vol. 52, p. 236, 1915.

## RESEARCH ON WILD LIFE

"The discovery of new species and races based upon the study of preserved specimens of game animals, has already progressed very far; but the more attractive field which includes the habits of the game remains yet to a great extent unexplored. This field is peculiarly open for investigation to big-game hunters, and to all other men who go far afield and obtain first-hand knowledge of the conditions under which the game animals live. The closet naturalist, with his technical knowledge of the structure of animals, can be trusted to perform the work of classification to a mathematical degree of precision; but we cannot obtain from him a trustworthy account of the behavior of animals in their natural environment, or learn from him the value to the animals of the various structures or characteristics which he has shown them to possess. Much knowledge regarding the habits of game is acquired by the successful sportsman. Yet it is often infinitesimal in quantity compared to what may be acquired if the outdoors observer will direct his investigations along the broad lines covering the life-history of the species with which he comes in contact. To carry out such investigations successfully it would be necessary to spend many hours and days, perhaps even weeks and months, observing certain individuals or family groups of game. This is quite beyond the limits of time allotted the average sportsman. Nevertheless much can be learned by the collected evidence from many fragmentary observations, providing only these are accurate. A great mass of accurate fragmentary observations will often spell far more progress in investigations of this kind than the observations of a few trained individuals over an extended period of time."

THEODORE ROOSEVELT and EDMUND HELLER.  
*Life Histories of African Game Animals*,  
Vol. I, pp. vii-viii, 1914.

## PURE AND APPLIED SCIENCE

"If you want improvements in industry, you may turn with confidence to applied science. If you want to revolutionize an industry or create a new one, you will do well to search the innermost recesses of the pure science laboratory."

SIR J. J. THOMSON.



GEORGE BIRD GRINNELL

Member of Honorary Advisory Council

## FOREWORD

After the death of Theodore Roosevelt, a number of his friends who knew him best on the side of sport or natural history inquiry felt very deeply that there should be established for him as a memorial an institution which should carry on a work that was very near his heart—an inquiry into certain phases of natural history in which he had always been interested. Chief among these was an investigation into various processes of wild life and especially into the life history of animals. Such studies would have scientific value and might lead up to matters of economic importance.

A suggestion to this effect was made to the committee having the Roosevelt Memorial in charge but did not appear to meet with favor, and those advocating it thought it undesirable to take any action which might seem to be in opposition to the wishes of the Memorial Committee.

Since Colonel Roosevelt's death, the Roosevelt Wild Life Forest Experiment Station has been established and has done good work. Its plan had been submitted to Colonel Roosevelt, who thought so well of it as to advocate it to some of his associates and to bring it before the Boone and Crockett Club. Its work is in line with the thought of some of Colonel Roosevelt's closest friends, and is of a character that would have greatly interested Colonel Roosevelt. The Station occupies a field not filled by any other institution in the State, and carries on research work on a scale not done elsewhere.

I feel that this Experiment Station deserves the support of all scientific men and of all lovers of outdoor life, and my personal feeling is that its work may profitably be extended beyond the limits of the State which authorized its establishment.

The average field-naturalist tends to become a collector of specimens rather than an investigator of the ways of animal life. His ambition is to collect the specimens as soon as he can, and as many as he can; and fearing lest each specimen shall escape him and be lost, he neglects the opportunity to observe it in life and to learn something about its habits and its ways. Often he takes this attitude from the institution for which he is working. It desires a great series of specimens which he feels he must secure. Yet the collecting of a large series of specimens, and the bringing them

home in satisfactory shape, should be only a small portion of the field-naturalist's work. Skins and skulls are useful, but skins and skulls and measurements and proportions tell us only a little about the living animal. Most of us wish to learn something about its ways of life.

I hope for great things from the Roosevelt Experiment Station; and I hope for them not only for the great service that this Station may render to science, but because this good service will be rendered in the name of one of the great field-naturalists of this country who was interested not only in science but above all in the betterment of America and of its people in every way.

No one more than Theodore Roosevelt appreciated the value of the work done and to be done by the field-naturalist. No one more than he would welcome those services to science that may be accomplished by the Experiment Station that bears his name.

GEORGE BIRD GRINNELL

# ROOSEVELT WILD LIFE STATE MEMORIAL

BY DR. CHARLES C. ADAMS

*Director, Roosevelt Wild Life Forest Experiment Station,  
Syracuse, N. Y.*

With the passing of Theodore Roosevelt the nation and the world naturally turned to estimate his place in the galaxy of great men. He was the most thoroughly and widely informed man of his time, and was aware of the significance of his own acts as few men in history have been. He did not drift about; he worked in whatever direction forward movement could be made toward a clearly defined goal. He reduced random movements to a minimum and took every possible advantage to hasten progress. The chemist and physiologist calls a substance a catalyzer or enzyme which hastens changes which otherwise proceed slowly, and there is no better word to describe Roosevelt's influence. His effect was that of a good yeast. He speeded up progress, which without him would have required many more years for accomplishment. For example, the Panama Canal would ultimately have been dug by some one, but not in our generation, and very probably not so much to the advantage of the United States.

The magnificent grasp which he possessed of historic events and of existing social, economic and political conditions of the world, made it possible, with his mental poise, to estimate, as has been said, very accurately the value of his own work. Evidently his chief method of procedure was to find out what was of the greatest importance, and then get behind it and work to the limit of his ability.

What was his supreme achievement? Some students of public affairs hold in highest esteem the influence which Roosevelt's idealism exerted on our public life. This was of the highest order and belongs in the same supreme place with that of Washington and Lincoln. He made concrete to our generation the living standards of these men as no other man has done. Others consider the Panama Canal as his greatest achievement, and still others his conservation program—the proper or highest use of nature's bounty for the best welfare of the people. It seems to me that this is

unquestionably his supreme achievement, because in it is the culmination or climax of his whole constructive national program.

In view of these considerations let us bear in mind that the supreme memorial to him is the life he lived and the work itself, as Lincoln said of the soldiers' lives given at Gettysburg. All other kinds of memorials worthy of the name should aim to continue the kind of work for which Roosevelt lived and strove. Let us fully realize this and proceed to do what is best, from this standpoint. We must expect considerable divergence of opinion, depending upon the variations in human nature, but in the minds of many a most appropriate memorial to Roosevelt would combine and recognize not only his public service but as well his distinctive personal qualities and likings. All grant that he was a statesman, a scholar, a hunter, and a field-naturalist. He was a field-naturalist first, and later became a scholar and statesman. He never outgrew his first love for wild nature and wild things of the field and forest. This knowledge of nature was the fertile soil upon which grew his conservation plans, which he developed in cooperation with Gifford Pinchot, the forester.

A memorial therefore which would help perpetuate one of Roosevelt's greatest achievements, namely, his conservation program as applied to forestry, including wild life, and which would promote a wide public interest in natural history studies, the subject "always uppermost in his mind," would be truly distinctive and worthy. Roosevelt himself has said:

"From now on it is essential to recognize that the best scientific men must largely work in the great out-of-doors laboratory of nature. It is only such outdoors work which will give us the chance to interpret aright the laboratory observations. . . . There must be ample research in the laboratory in order even to present those problems, not to speak of solving them, and there can be no laboratory study without the accumulation of masses of dry facts and specimens."

Here, in Roosevelt's own words, are the essential features for a plan to advance our knowledge of forest wild life by a balanced combination of outdoor study and laboratory research.

#### **The Establishment of the State Wild Life Memorial**

The Roosevelt Wild Life Forest Experiment Station of the New York State College of Forestry at Syracuse was authorized by the legislature in May, 1919, and has the unique distinction of being



The New York State College of Forestry, Syracuse, containing the offices and laboratories of the Roosevelt Wild Life Forest Experiment Station.

a memorial which was adapted from plans which had been presented to him for the study of wild life and which Roosevelt himself had approved. These plans were presented to him in December, 1916, by the College of Forestry and received his hearty commendation. He urged that they should be developed "in a big way," and began active work for them. We then went into the war and the subject was dropped temporarily, but with his death the Trustees of the College asked the Legislature to make these plans a nucleus for the Roosevelt Wild Life Forest Experiment Station. This was done, as has been stated, in May, 1919.

The law establishing the station reads as follows:

"To establish and conduct an experimental station to be known as "Roosevelt Wild Life Forest Experiment Station" in which there shall be maintained records of the results of the experiments and investigations made and research work accomplished; also a library of works, publications, papers and data having to do with wild life together with means for practical illustration and demonstration, which library shall, at all reasonable hours, be open to the public."

Thus New York State has definitely committed herself to this wild life Memorial to Theodore Roosevelt. From the Roosevelt family came the following hearty approval, through Lieutenant-Colonel Theodore Roosevelt, Jr.:

"I think your ideas are excellent and I know that my father would appreciate no type of memorial more than that which you suggest, as you know it was one of the subjects that was always uppermost in his mind. I give my consent without reservation for the use of his name for this memorial."

The appropriateness of the Memorial has been confirmed by a number of close friends and admirers of Roosevelt who had worked with him for many years in his campaigns for conservation. It is especially fitting that the Station should be located at the State College of Forestry at Syracuse because the College emphasizes modern forestry, which consists in using forest regions to the best human advantage. This includes not only the timber, but the fish and game which can be used for food and recreation, and any other crops, such as forage for grazing animals, and even a harvest of furs. It is a broad policy, but it is the only one yet discovered that is economically and socially sound.

It is also fitting that the Station should be located here for certain additional reasons: first of all, because the plan having Roose-



Fig. 1. The field party of the Roosevelt Wild Life Station at camp on Mount Marcy, working in cooperation with other scientists.



Fig. 2. A field party of the Roosevelt Wild Life Station, working on wild life problems in the Palisades Interstate Park, in cooperation with the Park Commissioners and the U. S. Bureau of Fisheries

velt's approval originated at the College; second, because the wild life problem is primarily a forest or non-agricultural land problem, for which adequate provision had not previously been made. There was no experiment station devoted solely to the requirements of the 14,000,000 acres of non-agricultural lands and waters in the State, although the agricultural needs were already fairly well supplied by experiment stations and farms; third, because the College is a New York State institution bound by its charter to conduct research and education in *all phases* of forestry; and fourth, because the Roosevelt Wild Life Station is solely a research institution, and is, therefore, more intimately related to education than to any administrative department of the State service. The State has already developed at Syracuse the largest and best equipped plant for diversified forestry education in America.

### **The Duties of the Roosevelt Wild Life Station**

The duties of the Roosevelt Wild Life Station are to investigate, by all possible methods, our forest wild life: including the habits, life histories, methods of propagation and management of fish, birds, game, food and fur-bearing animals. The Station is thus primarily devoted to *increasing our knowledge* of forest wild life, by both outdoor and laboratory study which will develop new or improved methods of increasing the forest production of fish, fur and game animals and show their application to general forest management. The Station, therefore, supplements all State administrative agencies in forest wild life work and does not in practice duplicate that of any other State scientific department. Any incidental overlapping might even be beneficial if different methods of approach were used.

Since the establishment of the Station it has taken over the forest wild life investigations already under way in the Department of Forest Zoology at the College and has enlarged and extended them. Thus the fish surveys of Oneida Lake, of Cranberry Lake in the Adirondacks, and of the waters of the Palisades Interstate Park and Erie County have been taken up or continued, and similar work will be extended to other parts of the State as rapidly as funds will permit.

The investigations begun in the Adirondacks, on the relation of birds to the protection of the forest, have been extended to the Palisades Interstate Park. Hon. Louis Marshall, President of the

Board of Trustees of the College of Forestry, gave loyal support to the migratory bird treaty with Canada, upon the basis of the protective value which birds give forests in destroying harmful insects. The decision of Justice Holmes, of the United States Supreme Court, acknowledges the value of this kind of forest protection. This is only one phase of the special work to which the Station is devoted, and it is a fine example of the kind of research which will guide the State and nation in enacting just and constructive legislation and making wise decisions in our courts.

For several years the College has advocated the investigation of the game vermin of the State and means for its control, but funds have been lacking to advance this work. Now it is hoped that the Station can make a good start on this important problem and determine the relation of game vermin to the problem of fur production, as well as its relation to game management. A scientific study is needed of the winter life of the Adirondack deer; and the beaver problem in the Adirondacks is also in urgent need of careful *technical study*, from the standpoint of the forest trees, of water storage, as well as its influence on trout.

The fur industry in the State is in vital need of scientific guidance with regard to the natural history of our fur-bearing animals. The sudden rise of New York City to leadership in the dressed fur markets of the world is an event of great importance, only slightly appreciated by many. We have never had a careful study of the chief fur-bearing animals of the State, such as the muskrat, skunk, and the raccoon. The Station has made a start on these problems and deserves hearty support from all who are interested.

These are but a few examples of the kind of work in which the Roosevelt Wild Life Forest Experiment Station is now engaged, or for which it is making comprehensive plans. These suffice to indicate what the Station is doing in various parts of the State in attempting to solve the more practical and urgent problems concerned with forest wild life, and in such manner as to make the Station a worthy memorial of New York State to Theodore Roosevelt.\*

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\* Reprinted by permission of Mr. James Malcolm, Editor, from *State Service* (Magazine), Vol. 5, pp. 57-60, 1921.



MRS. CORINNE ROOSEVELT ROBINSON

Member of Honorary Advisory Council

# APPROPRIATENESS AND APPRECIATION OF THE ROOSEVELT WILD LIFE MEMORIAL

DR. CHARLES C. ADAMS, DIRECTOR

The establishment of a wild life Memorial to commemorate Roosevelt's interest in and achievements for forest animals seems a very natural response to everyone acquainted with him. Its appropriateness is emphasized most strongly by those who were closest to him.

## Indorsements

In response to a request for the use of the Roosevelt name, Lieutenant-Colonel Theodore Roosevelt wrote: "I know that my father would appreciate no type of memorial more than that which you suggest, as you know it was one of the subjects that was always uppermost in his mind. I give my consent without reservation for the use of his name for this memorial."

Captain Kermit Roosevelt wrote as follows: "I was very much pleased to learn of the foundation, as it is the sort of activity of which my father would heartily have approved, and should play an important and useful part in the study and preservation of our wild life."

Mrs. Corinne Roosevelt Robinson, on her recent visit to the Station expressed her enthusiastic approval of its aims and gave assurance of the fitness of this memorial to her brother.

Dr. George Bird Grinnell, the Nestor of American sportsman-naturalists, and a life-long friend and co-worker of Roosevelt, wrote, May 19, 1919: "Some of us feel very deeply that in this project Mr. Roosevelt would have felt an interest far keener than in the various monuments of which we now hear so much and which no doubt will be carried through. . . . It seems to me that there is no limit to the good that may be accomplished by it, and this appears to be the first active step in a work that will receive more and more attention in this country. . . . My long friendship with Theodore Roosevelt gives me a peculiar interest in this Station on sentimental grounds; and my life-long experience in promoting the protection of natural things on purely economic grounds justifies my faith in your work, and leads me to hope that your plea for support may be successful."

Hon. Henry L. Stimson, former Secretary of War, wrote: "I sympathize with the purpose of making your Station a Memorial to Theodore Roosevelt. I know his sympathy and interest in that kind of work, and I feel it is just the kind of purpose in which he would take deep and lasting interest."

Mr. Edmund Heller, Roosevelt's companion on his African hunting trip, and joint author with him of *The Life Histories of African Game Animals*, wrote: "The Roosevelt Wild Life Forest Experiment Station, the Memorial to Theodore Roosevelt, is just the sort of memorial of which he would have approved. . . . Nothing would have brought more joy to Roosevelt's heart than the establishment of a Wild Life Experiment Station such as you have, where animals can be studied free from artificial conditions. . . . It seems particularly fit that this institution should commemorate such a man as Roosevelt, whose keenest enjoyment in life was the pursuit and study of animals in their native haunts."

Mr. Horace M. Albright, Superintendent of the Yellowstone National Park, writes: "I have read your bulletin on the Roosevelt Wild Life Forest Experiment Station and have found it most interesting. You have undertaken a great public work and it deserves the support of every section of the country, and particularly does it deserve the encouragement of every Government institution that is interested in the conservation of forest wild life; and as superintendent of our greatest game-preserve, Yellowstone Park, I hope that you will call on me for any aid that you think I am capable of giving to the Experiment Station."

Dr. William T. Hornaday, Trustee, Permanent Wild Life Protection Fund, a life-long champion of wild life protection, writes as follows: "I give my most cordial indorsement to the aims and purposes of the Roosevelt Wild Life Station, and I regard it as a very necessary factor in the fight for better preservation and better utilization of the wild life of the State."

The indorsement and commendation of this Memorial bring out clearly its appropriateness and unique character, and are an assurance by the highest authority that it stands for Roosevelt's distinctive personal interest, as well as for a large and important part of his conservation program, paving the way for an intelligent use of forests and forest wild life. Still another distinguishing and commendable feature of the Station is that it is an adaptation of plans for wild life research which Roosevelt himself approved, as will now be shown.



Fig. 1. The game laboratory of the Roosevelt Wild Life Station, with a temporary game exhibit.



Fig. 2. The office of the Ichthyologist, Roosevelt Wild Life Station.



Fig. 1. The fish laboratory of the Roosevelt Wild Life Station.



Fig. 2. Another view of the fish laboratory, showing methods of storing the collections.

### Roosevelt's Approval of the Original Plans

That Roosevelt himself heartily approved not only of wild life research in general but of the general program which is now the foundation of this Memorial Station, is, as has been stated, its most distinctive feature.

A brief plan for research in wild life was presented to Mr. Roosevelt on December 29, 1916. He at once approved the idea, and suggested that as a member of the Executive Committee of the Boone and Crockett Club he would gladly present this matter to the Committee at an early meeting, and requested that I write him a fuller statement. This plan was outlined in my letter to him of January 8, 1917, as follows:

"In response to your recent request for a working plan for the scientific investigation of the life history and natural history of the large game and fur-bearing animals, I would suggest the following:

#### STATEMENT OF THE PROBLEM

"In view of the fact that there are several organizations and endowments devoted solely to the protection and propagation of the large game and fur-bearers, and none devoted solely to the investigation of their life history and natural history, it is evident that this field is greatly neglected. I know of no one whose time is devoted solely to this kind of investigation.

"The present critical economic condition will certainly influence these animal's. The recent organization of our National Park Service, and the extensive area of National Forests suitable for large game, and the impending crisis of the beaver problem in New York, are examples which show the urgency of scientific investigation of those problems by technically trained men before the management and administration of these animals in preserves and forests can be executed intelligently.

"While of course considerable is known about the life histories and habits of our larger animals, yet much more remains to be learned about even the beaver, possibly the best known species. At present our knowledge of these larger animals is very superficial indeed, when compared with what is known of many harmful insect pests, such as the Chinch Bug, Rocky Mountain Locust, and the San Jose Scale. We are passing through an important awakening as to the value of wild animals, and yet we have no generally recognized policy for the management of animal sanctuaries because we know so little about the larger dominating species.

"Special attention should be called to the fact that emphasis is here placed not on the technical details of species and varieties (a subject which for the North American fauna has reached the

point of 'diminishing returns') but on the activities of the living animal and its relation to the real world in which he lives.

"There is thus an urgent need for scientific research. How can this be best favored?

#### PROPOSED REMEDY

"Our larger universities, as a rule, have ignored the investigation of the larger game animals, and at present there is no indication of an early change of policy. The larger animals of the forest have for ages been considered as one of the regular products of the forest, or as Chief Forester Graves of the Forest Service has expressed it: 'Wild life is largely a forest product. It should be regarded as a public resource, to be protected and systematically developed. It is a resource which is easily destroyed under abuse; but it readily responds to right treatment. The intelligent fostering of the valuable wild life of the forest is and has always been one of the objects of forestry. Forests are more than trees. They are rather land areas on which are associated various forms of plant and animal life. The forester must deal with all. Wild life is as essentially and legitimately an object of his care as are water, wood, and forage. Forest administration should be planned with a view to realizing all possible benefits from the land areas handled. It should take account of their indirect value for recreation and health as well as their value for the production of salable material; and of their value for the production of meat, hides, and furs of all kinds as well as for the production of wood and the protection of water supplies.'

"The relation of game to forests is thus seen to be a permanent one and not a temporary alliance. It should not depend upon the favor of a few men who happen to be interested, for it is based upon mutual fundamental interests and therefore there should be a definite policy looking forward to permanent results. The most promising methods of favoring research on these large game animals are:

"First, to utilize trained men. To put into the field such available trained men as can be secured to investigate important and urgent problems. These men should be used while younger men are in training.

"Second, train young men. By means of fellowships young men can be encouraged to get the necessary training to become technical investigators of large game animals.

"It would be the part of wisdom to utilize both of these methods at some educational institution where emphasis is put upon research."

At a meeting of the Directors of the Boone and Crockett Club soon afterward a special committee was authorized to consider this plan, composed of Dr. Lewis Rutherford Morris, chairman, acting

with Major W. Austin Wadsworth, president of the Club. Dr. Morris then wrote me, "The club took much interest in the matter . . . . which you set forth in your letter, and in favor of which Mr. Roosevelt spoke very strongly at the meeting." The committee then requested that the plan be presented to the Club at its annual meeting on February 8, 1917. The general plan presented to the Boone and Crockett Club at this meeting, except for certain financial estimates and other business items, is republished just following this article (pp. 35-41), under the title "Suggestions for Research on North American Big Game and Fur-Bearing Animals."

In response to a letter sent to Colonel Roosevelt with a request for suggestions, came this reply, dated January 18, 1917, which was quite characteristic: "I would not know what plan to suggest to you. Morris and Wadsworth are both big fellows, to whom you can talk in a big way, and put the case frankly before them. . . . It was a real pleasure to bring the matter before the Club and get Dr. Morris to take it up." This statement expresses very clearly that he believed the plans should be developed in a "big way." We have in these words Roosevelt's approval of the general project now being carried on. No other program would prove a more worthy Memorial of the man.

The Boone and Crockett Club, on April 25, 1917, passed the following resolution:

"Whereas, Professor Charles C. Adams, of The New York State College of Forestry at Syracuse University, has brought to the notice of the Executive Committee of the Boone and Crockett Club a plan for the scientific study of the life-habits of the fur-bearing and large mammals of North America,

"Resolved, That this committee heartily approves this plan, and believes the results of such an investigation would be of vast scientific interest and probably of great economic value."

(Signed) KERMIT ROOSEVELT,

Secretary of the Boone and Crockett Club.

LEWIS R. MORRIS,

Chairman of the Special Committee.

With the entrance of the United States into the World War on April 6, 1917, it was decided to reserve this plan of research for development at a more favorable time. The armistice was signed November 11, 1918, and Roosevelt died soon after, on January 6, 1919. These plans for research had, throughout, the hearty support



THEODORE ROOSEVELT

Member of Honorary Advisory Council

of Dr. Hugh P. Baker, then Dean of the College of Forestry, who took the plan to the Trustees of the College. Inasmuch as it had originated at the College, and had had Roosevelt's approval, the Trustees considered it eminently appropriate as a Memorial, and therefore requested Senator J. Henry Walters and Assemblyman George R. Fearon to present a bill to the Legislature authorizing the establishment at the College of the Roosevelt Wild Life Forest Experiment Station. This bill was presented to the Senate and Assembly on March 26, 1919, and became a law May 10, 1919, with the approval of Governor Alfred E. Smith.

### Activities of the Memorial Station

This brief account of the origin of this Memorial shows how New York State has made a very modest start indeed toward what, in the minds of many, is the most appropriate kind of Memorial to her greatest citizen; and the future must reveal what wisdom and foresight the State will show in its proper nurture. The State of New York thus becomes the guardian of this wild life Memorial to Theodore Roosevelt. The New York State College of Forestry at Syracuse, is a State institution supported solely by State funds, and the Roosevelt Wild Life Forest Experiment Station is a part of this institution. The Trustees are State officials. A legislative mandate instructed them as follows:

"To establish and conduct an experimental station to be known as 'Roosevelt Wild Life Forest Experiment Station,' in which there shall be maintained records of the results of the experiments and investigations made and research work accomplished; also a library of works, publications, papers and data having to do with wild life, together with means for practical illustration and demonstration, which library shall, at all reasonable hours, be open to the public." [Laws of New York, chapter 536. Became a law May 10, 1919.]

Special attention should be called to this unique provision for a wild life library. We have no such public library in America devoted exclusively to this subject. The policy of the Station is to build up a comprehensive collection of publications of all kinds, including also original note books, manuscripts, photographs, drawings, and other illustrative material, technical and popular, which bear upon the use and appreciation of forest wild life.

While this Memorial Station was founded by New York State, its functions are not limited solely to the State. The Trustees of



KERMIT ROOSEVELT

Member of Honorary Advisory Council.

the Roosevelt Station are further authorized by law to cooperate with other agencies, so that the work is by no means limited to the boundaries of the State or to the use of State funds. Provision for this has been made by the law which enjoins the Trustees—

“To enter into any contract necessary or appropriate for carrying out any of the purposes or objects of the college, including such as shall involve cooperation with any person, corporation, or association, or any department of the government of the State of New York or of the United States, in laboratory, experimental, investigative or research work, and the acceptance from such person, corporation, association, or department of the State or Federal government of gifts or contributions of money, expert service, labor, materials, apparatus, appliances or other property in connection therewith.” [Laws of New York, chapter 42. Became a law March 7, 1918.]

By these laws the Empire State has made provision to conduct forest wild life research upon a general and comprehensive basis, and on a plan as broad as that approved by Theodore Roosevelt himself.

From its inception the Station has enlisted the cooperation of other State departments, first with the Commissioners of the Palisades Interstate Park, and later with the Commissioners of the Allegany State Park and the State Conservation Commission on Park wild life problems. Special investigations have been conducted with the assistance of the United States Bureau of Fisheries, in the Palisades Interstate Park and on Oneida Lake. On Mount Marcy in the Adirondacks, timber line conditions were studied with the Ecological Society of America, the Brooklyn Botanic Garden and the Vermont Agricultural Station. A fish survey of Erie County has been conducted with the Buffalo Society of Natural Sciences, the Erie County Society for the Protection of Birds, Fish and Game, and seven other allied organizations in that vicinity. Several Trustees of the College of Forestry have contributed funds for a special study of the Adirondack beaver which was made during the past summer.

In addition to the cooperation with various State departments, private organizations and individuals within the State, studies now in progress in Yellowstone National Park have been made possible through the financial support of the Yellowstone Park Camps Company and a grant from special friends, together with the assistance of the National Park Service and with the collaboration of several

field naturalists. This has provided for studies of the fish food, the beaver, and the large mammals of the Park. The original plans presented to Roosevelt made provision for just such studies in our National Parks and Forests on the broadest possible basis.

### The Honorary Advisory Council

In the plans for wild life research presented to Mr. Roosevelt provision was made for an Honorary Advisory Council to assist in their execution. After the Memorial Station had been established, it was considered that this feature should be included in the present Station plans.

It was considered eminently appropriate that at this stage this Council should include only those who were close personally to Roosevelt, or who had some special interest in promoting research on wild life.

The present American members of the Honorary Advisory Council are:

**Mrs. Corinne Roosevelt Robinson**, New York City. By nature destined to be an intimate sharer in her brother's life work. Author of *My Brother Theodore Roosevelt*.

**Theodore Roosevelt**, Assistant Secretary of the Navy, Washington, D. C. Mr. Roosevelt gave consent to the use of the Roosevelt name for this Memorial Station.

**Kermit Roosevelt**, New York City. Companion of his father on his expeditions in Africa and South America. Author of *The Happy Hunting Grounds*.

**George Bird Grinnell**, New York City. Life-long friend and associate editor with Roosevelt; a founder and for some years President of the Boone and Crockett Club, of which Roosevelt was the originator.

**Gifford Pinchot**, Harrisburg, Penna. Leading co-worker with Roosevelt in his general conservation campaigns and in the establishment of National Forests—a chief stronghold of wild life.

**Chauncey J. Hamlin**, Buffalo, N. Y. Ardent supporter of Roosevelt in his political reforms, and actively engaged in constructive wild life conservation.

**George Shiras, 3rd**, Washington, D. C. Wild life photographer, congressman, author of the original Federal migratory bird bill, and author of the bill for the Federal protection of migratory fish.

**Frank M. Chapman**, New York City. Ornithologist, close friend of Roosevelt, and a leading champion of outdoor bird study.



VISCOUNT GREY

Member of Honorary Advisory Council

The European members of the Council are:

**Viscount Grey**, Falloden, England. Author of *Fly-Fishing*. A close student of birds, whose story of his bird outing in the New Forest with Roosevelt, as told in his essay on *Recreation*, will inspire every outdoor enthusiast.

**Viscount Bryce**, Forest Row, England. A close friend of Roosevelt, and keenly appreciative of wild nature; a sympathetic friend of American institutions, and our most respected and cherished European statesman.

**Sir Harry H. Johnston**, Arundel, England. A keen admirer of Roosevelt, a successful student of wild life, and a wilderness explorer.

Very hearty approval of the plans for the Station have come from various members of the Honorary Advisory Council. Thus Viscount Grey remarks:

"The project for a Roosevelt Wild Life Forest Experiment Station appeals to me strongly, both by the intrinsic interest of the subject and by the fact of its being a memorial of one for whom I had great admiration and regard. I very much appreciate the invitation to be a member on its Honorary Council. . . . I should feel it both a pleasure and an honor to be associated with the Memorial Station in any honorary capacity that you think suitable, and I shall always be interested to hear of its progress and work."

And Viscount Bryce writes:

"I cordially appreciate your invitation to become a member of the Honorary Advisory Council proposed to be created, and as I assume that membership thereof does not involve active duties, which of course my residence in England would not permit me to discharge, I have much pleasure in accepting the honor." He further adds that he is in "hearty sympathy with the work described [in publications sent to him] and with every plan for preserving wild life and the untouched aspects of Nature. Theodore Roosevelt did admirable work in that line, and I rejoice to learn that the impetus is not declining."

Sir Harry H. Johnston writes similarly:

"I feel myself both honoured and gratified at being selected as an Honorary Advisory Councilor of the Memorial to Theodore Roosevelt's intense interest in the beauties and wonders of United States wild life and natural scenery. You are right in supposing that he exercised considerable influence on my mind in regard to interest in American scenery and the preservation of American wild

life. . . . If, without being impertinent, I might make some expression of my hopes, it would be that this commemorative influence of Roosevelt might spread far beyond New York and New England into those States of unappreciated natural beauty, Georgia, Alabama and Louisiana, in time to save their splendid magnolia forests from destruction."

That the Station should not be limited to New York State is the opinion expressed by many persons who are unaware that this feature is already provided for by law.

An editorial in *Forest and Stream* reads thus:

"Three years ago the authorities of the New York State College of Forestry submitted to Colonel Theodore Roosevelt plans for an inquiry into the wild life of the New York forests, and received the promise of Mr. Roosevelt's hearty support and that of a number of his friends and associates. The establishment of the Roosevelt Wild Life Forest Experiment Station marks the first active step in a movement . . . likely to go far in the United States. . . . The work of the Roosevelt Experiment Station will thus consist of experiment, investigation, and general research into the wild life which occupies millions of acres of land and water. . . . For some years work of this character has been urged upon the Interior Department, and in a tentative way has even been undertaken by the National Parks Service. . . . The work that such an experiment station may do is almost limitless, and its possibilities are as yet quite beyond the range of our imagination." (Vol. 89, p. 409, August, 1919).

In concluding this brief account of the history of this Roosevelt Memorial, too much emphasis cannot be put upon its unique features. It is the only existing Memorial that has been built upon a plan that had Theodore Roosevelt's personal approval. There is unanimous agreement among those who were closest to Roosevelt, and who shared his interests in wild life, that this is the most appropriate kind of Memorial to him. The State of New York is the guardian or trustee of this Memorial, has made a comprehensive plan for its future development, and now awaits the execution of this plan in a manner worthy of her greatest citizen.



Field headquarters of Roosevelt Wild Life Station party, at Camp Roosevelt, Yellowstone Park, 1921.  
Courtesy Forest and Trail Camp.

# SUGGESTIONS FOR RESEARCH ON NORTH AMERICAN BIG GAME AND FUR-BEARING ANIMALS

Presented by request to the Boone and Crockett Club

BY DR. CHARLES C. ADAMS

*Professor of Forest Zoology, The New York State College of Forestry at Syracuse University*

## Introduction

**Statement of the Problem.** In view of the fact that there are several organizations and endowments devoted solely to the *protection and propagation* of large game and fur-bearers, and *none* devoted solely to the investigation of their life history and natural history, it is evident that this field is greatly neglected. I know of no one whose time is devoted solely to this kind of investigation.

The recent organization of our National Park Service, and the extensive area of National Forests suitable for large game, and the impending crisis of the beaver problem in New York, are examples which show the urgency of scientific investigation of these problems by technically trained men before the management and administration of these animals in preserves and forests can be executed intelligently.

While of course considerable is known about the life histories and habits of our large mammals, yet much remains to be learned about even the beaver, possibly the best known woodland species. At present our knowledge of these larger animals is very superficial indeed, when compared with what is known of many harmful insect pests, such as the Chinch Bug, Rocky Mountain Locust, and the San Jose Scale. We are passing through an important awakening as to the value of wild animals and yet we have no *generally recognized policy for the management of animal sanctuaries because we know so little about the larger dominating species.*

Special attention should be called to the fact that emphasis is here placed not on the technical details of species and varieties (a subject which for the North American fauna has reached the point of "diminishing returns") but on the *activities of the living animal and its relation to the real world in which it lives.*

There is thus an urgent need for scientific research. How can this be best favored?

**Proposed Remedy.** Our larger universities, as a rule, have ignored the investigation of the larger game animals, and at present there is no indication of an early change of policy. The larger animals of the forest have for ages been considered as one of the regular products of the forest, or as Chief Forester Graves of the United States Forest Service has expressed it: "Wild life is largely a forest product. It should be regarded as a public resource, to be protected and systematically developed. It is a resource which is easily destroyed under abuse; but it readily responds to right treatment. The intelligent fostering of the valuable wild life of the forest is and has always been one of the objects of forestry. Forests are more than trees. They are rather land areas on which are associated various forms of plant and animal life. The forester must deal with all. Wild life is as essentially and legitimately an object of his care as are water, wood, and forage. Forest administration should be planned with a view to realizing all possible benefits from the land areas handled. It should take account of their indirect value for recreation and health as well as their value for the production of salable material; and of their value for the production of meat, hides, and furs of all kinds as well as for the production of wood and the protection of water supplies."

The relation of game to forests is thus seen to be a *permanent one* and not a temporary alliance. Progress in game should not depend upon the favor of a few men who *happen* to be interested, for it is based upon mutual fundamental interests and therefore there should be a definite policy looking forward to permanent results. For these reasons it is suggested that cooperation between those interested in game and fur-bearers and a forestry institution, The New York State College of Forestry, is based on sound logic and upon mutual advantages. The College is a State educational and *research* institution which is devoted to the utilization of all forest crops both plant and animal. It is now coming to be generally recognized that animal crops (game and fish) from forests are necessary and legitimate in forest practice, as much so as is the production of cattle on the farm.

The following provisional suggestions are intended to aid in the *selection* of a problem or problems and in the *development of a working plan*.

### Proposed Research on Alaskan Big Game

The coastal region of Alaska is at present the *main home* of American big game. These animals are of exceptional interest, and in spite of the excellent work by several skilled field men they are in reality but little known. There has been no work done by resident naturalists who have lived there the year round devoting their whole time to the study of the game. This region is above all the *most important region for investigation in America*.

I would suggest headquarters for a field party on the Kenai Peninsula. With the railroad developing from Seward there is urgent need of early study of the game of this peninsula before it is too late.

It may be objected that the remoteness of the region, and the expense of working at this distance, are serious defects of this project, but *importance* of the subject, its *urgency* on account of the railroad, and the little detailed knowledge which we have of the animals, should be kept in mind.

A naturalist, with two trained assistants, a guide, and camp cook, located at a permanent camp from which local camps could be reached, would permit detailed study of the region and an intimate knowledge of the big game and of the smaller organisms upon which they are dependent.

So far as known to me no such study has ever been made of big game. It would, if carried out properly, serve as a model for other workers for years to come and would raise the standard of game study to a new and higher level.

### Proposals for Eastern Big Game

In addition to the Alaskan project it is very desirable also to do some *intensive work* on the game nearer home. With this in mind the following suggestions are given with the idea of selecting the most suitable:

**1. New York Deer.** To make a detailed field study of the seasonal changes in habits, food, influence of weather, behavior during the breeding season, care of young, causes of death, normal density of deer population in forests, influence of deer upon the vegetation and allied subjects.

Such a study could be made on some of the large preserves in the Adirondacks or Catskills (possibly on property belonging to



Fig. 1. Field party of the Roosevelt Wild Life Station in Yellowstone Park, summer of 1921. Park ranger mounted.



Fig. 2. Lodge at Forest and Trail Camp, shared by Roosevelt Wild Life Station field party, in the Yellowstone.

some member of the Club). A carefully selected area with diversified conditions would furnish opportunity for important results. In spite of the fact that the deer has been hunted so much and has been the basis for so much legislation, *technical studies* of it are conspicuously wanting. In fact, when we compare our knowledge of the Codling Moth of the apple and the Cotton Boll Weevil with that of the deer, it is amazing how little we really know about the deer although this is contrary to the usual impression.

**2. Game Survey of the Mt. Ktaadn Region.** A game survey of the Mt. Ktaadn region is desirable in order to determine the amount of game, how the species influence one another, and to secure detailed data on their life histories. Such a scientific study is needed for many reasons, such as:

- a. There is some reason to hope that this might be made the best, or one of the best, big game preserves in Eastern United States.
- b. Such a study might aid in the establishment of a National Park.
- c. Should a Park be established such an investigation would aid in the intelligent management of the large game, and in stocking the Park properly.
- d. The example of such work would stimulate other similar investigations.

**3. Caribou and Moose in Eastern Canada.** A study of the Caribou and Moose (and possibly of other big game) in Eastern Canada. Detailed field studies along lines similar to those suggested for the deer.

For the preceding Eastern investigations the following kind of party is suggested:

A naturalist, with an assistant and a camp hand. For the Ktaadn problem two assistants should be provided.

Possible objections to all these Eastern plans are very likely to come mainly from those who are much influenced by the mass of game literature, or who are perhaps for the time being much more interested in the propagation and protection of game than in understanding it and in advancing our knowledge of it. It is hardly necessary to mention that the mass of game literature is of a popular character and is largely pure trash, as far as science is concerned. Today we probably know more about the rat and the fur seal than any other wild mammals, and yet every one knows that our knowledge of the seal is far from complete, and the urgency of a scientific

knowledge of the rat increases every year in spite of the extensive investigations made during recent years. When, therefore, we compare what is known of these animals with that of our Eastern game and fur-bearers the contrast is very marked indeed. In spite of all we know there is urgent need of further investigation.

### Proposals for Western Big Game

The large amount of big game in the West very naturally calls for suggestions for that region. Here also several are made:

**1. Big Game of the National Parks.** This might be a study of the life history of the big game in some Western National Park, such as the Yellowstone, Glacier National Park or Rocky Mountain National Park.

**2. Life History of the Mountain Sheep and Goats of Glacier National Park.** Study of the detailed life history of the Mountain Sheep and Goats of Glacier National Park.

**3. Relation of Beavers to Conservation of Water and Soil.** An important study should be made of the relation of beavers to soil, water and fish conservation in the Rocky Mountain region, including a careful measurement of the areas flooded (made with the assistance of a civil engineer), depth of soil accumulated by dams, and influence of these dams upon fish. With all that is known about the beaver, there is no recent detailed work along these lines since conservation became a live issue.

**4. Game Vermin.** A detailed study should be made of the game vermin of a *limited area* in order to get a better understanding of the character of the "balance of nature" existing between game and game vermin. No careful detailed study of this problem has ever been made in America.

This study could be made in a National Forest or Park. By means of systematic trapping of the live animals, and extensive field observations much important scientific and practical information could be acquired which would bear upon the "struggle for existence" of game. It should be made a study of their dynamic relations.

The coyote, bear and mountain lion are being destroyed at a rapid rate because of their relation to grazing, but the relation of these animals to game has not received much attention as a scientific problem.

For the preceding Western investigations the following kind of party is suggested:

I. A naturalist, with one assistant (two for the larger problems), and one or two camp helpers.

### Fellowship and Scholarship Plan

In addition to the use of trained field naturalists as a means of advancing our knowledge, provision is desirable to care for a rising generation of trained men who can and will study the big game problems. At present there are no such positions in our colleges and universities, and there is a great paucity of men who are able to do field work on game animals, and who can or will publish their results. To improve this situation the establishment of Fellowships and Scholarships is urged.\*

January 31, 1917.

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\* Reprinted; see p. 25.

## WILD LIFE RESEARCH IN THE YELLOWSTONE

"This whole episode of bear life in the Yellowstone is so extraordinary that it will be well worth while for any man who has the right powers and enough time, to make a complete study of the life and history of the Yellowstone bears. Indeed, nothing better could be done by some of our outdoor faunal naturalists than to spend at least a year in the Yellowstone, and to study the life habits of all the wild creatures therein. A man able to do this, and to write down accurately and interestingly what he had seen, would make a contribution of permanent value to our nature literature."

THEODORE ROOSEVELT.

*Outdoor Pastimes of an American Hunter*, p. 315, 1908.



SIR HARRY H. JOHNSTON  
Member of Honorary Advisory Council

## THEODORE ROOSEVELT

By Sir HARRY H. JOHNSTON

The ex-President of the United States who died in the first week of 1919 was in many ways the most remarkable man I have ever met, and combined with unusual qualities of intellect and co-ordinated development of bodily skill — for was he not a fine shot, a bold equestrian, an untiring marcher, an adept at most games and sports? — a kindness and sweetness of disposition, and a thoughtfulness for the happiness and well-being of all around him, very rare in great men of the world.

He was a field-zoologist of the new school, the school which has given us J. G. Millais, Radclyffe Dugmore, Ernest Seton, C. W. Beebe, and a host of young and middle-aged Americans who have studied wild life with unswerving accuracy, seeking only to set forth the truth in real natural history, and disposing summarily of many a hoary lie and legend about wild life, scorning, moreover, the vagueness of statement and nomenclature which arises from imperfect observation and inadequate study.

Theodore Roosevelt was not only a great naturalist himself, but — what in its ultimate effect was even more important — he set, as President, the fashion in young America for preserving and studying fauna and flora until he had gone far to create a new phase of religion. Under his influence young men whose fathers and grandfathers had only studied the Bible, the sacred writings of the post-exilic Jews and Græco-Syrian Christians, now realised that they had spread before them a far more wonderful Bible, the book of the earth itself. Geology, palæontology, zoology, botany, ethnology, were part of Roosevelt's religion. He may have been a specialist in none of these branches of science, but he saw the divinity pulsating through them, more glowingly apparent than in narrow imaginings of theology.

The man's memory was prodigious. I once spent some ten days — in two separate visits — as his guest at the White House in 1908. At one luncheon party the question of Mayne Reid's novels came up. Roosevelt gave a *précis* of the more remarkable of their plots, of their characters, their defects and strong points. So he could with Dickens, Thackeray, Jane Austen, Nathaniel Hawthorne, and Mark Twain. When I was setting out to study the negro in

the New World he gave me from memory an almost complete bibliography of the works discussing the slavery question in the United States, from the books of Anthony Benezet in 1762 to those of Olmsted in 1861. Once, when the then Provost of Oriel called and lunched, and was rather perversely Hellenistic in his lore, Roosevelt, with a twinkle in his eye, turned the subject to the Tatar invasion of Eastern Europe in the thirteenth century, and gave us a really remarkable sketch of its chief incidents and ultimate results.

It would be a great mistake to represent this great man as one who monopolised the conversation in public or in private. On the contrary, he was a rarely good and encouraging listener to anyone who had something to say, and singularly courteous about not interrupting. Indeed, he drew out good conversation in those around him, besides being an exceptionally interesting talker himself.

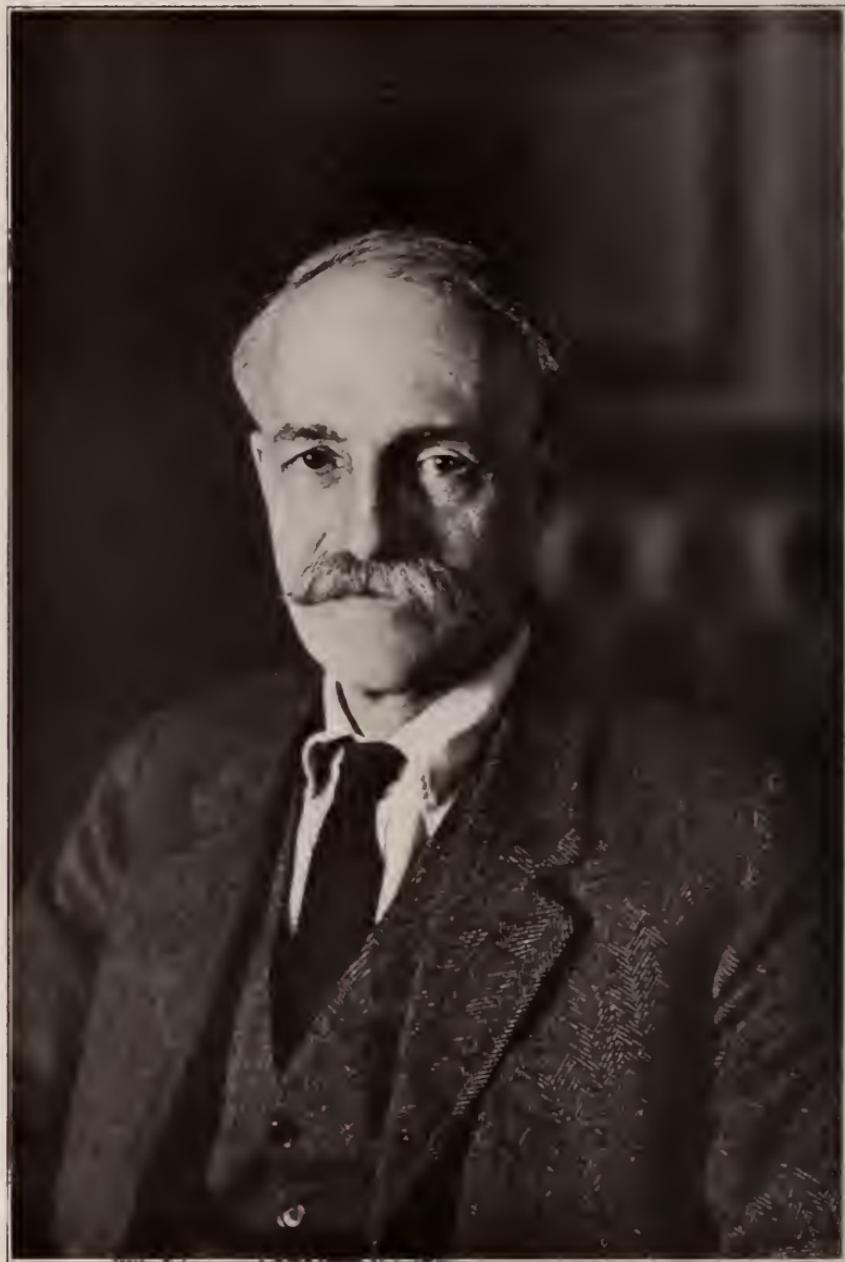
As a writer on zoology Roosevelt is best known by his *African Game Trails* and *African Game Animals*, but his *Outdoor Pastimes of an American Hunter* (1908) is well worth reading, both for letterpress and illustrations. *Through the Brazilian Wilderness* gives a truthful, though not always exhilarating, description of the Brazilian forest and grassy plains. But there is another side to Theodore Roosevelt, and many an instance of his versatility, in the five volumes of his "Presidential Addresses and State Papers." Probably no head of a State in history has uttered so much sound sense with so much originality of diction and illustration. In Roosevelt we had for the first (and, so far, the only) time a great ruler who was also an adept in the modern sciences, a student and an exponent of the New Bible, a statesman who was extraordinarily well versed in geography — prehistoric, historical, political, physical, and commercial — who was strongly interested in botany, ethnology, zoology, philology, modern history, sociology, and questions of hygiene and the struggle for the supremacy of man over recalcitrant Nature. He gave a great impulse to the research into the causes of yellow fever, and the means of eliminating it from Cuba and Panama. If we only had the luck to acquire a Prime Minister with the learning, the driving force, and the sincerity of Roosevelt, what might not be the after-history of the British Empire, could such a Premier direct its destinies and the education of its governing classes for seven years? But, alas! Politics in Britain do not breed Roosevelts.\*

\* Reprinted, by permission of Sir Harry H. Johnston, and the Editor, from *Nature*, Vol. 102, pp. 389-390, January 16, 1919.



GEORGE SHIRAS, 3RD.

Member of Honorary Advisory Council



GIFFORD PINCHOT

Member of Honorary Advisory Council

## ROOSEVELT'S PART IN FORESTRY

BY DR. GIFFORD PINCHOT

Instead of a formal article from me describing in a balanced way President Roosevelt's service to forestry, will you accept this discursive letter, which neither surrounds the subject nor lays measured stress upon its different parts, but just talks about the man and the leader whom we all loved. Just at the moment I am deep in an effort to defend the Roosevelt policies as to coal, oil, and phosphate, and that comes first.

Some men belong to all people and all time. I suppose it is true that Theodore Roosevelt was loved and trusted by more men and women in more lands during his lifetime than any other man who ever lived. Certainly more men and women followed him in spirit to the grave than ever did the like before for any other man in human history.

Very much of the work that Roosevelt started is yet unfinished. As his great soul goes marching on, we know that at the very heart of the goal to which it marches is that greatest of Roosevelt policies — the planned and orderly development and conservation of the natural resources of America — by no means forgetting the forest, which in a true sense is the mother of all the rest.

No matter how or where you touched him, you could not long delay in finding that Roosevelt was an outdoor man. Gifted in the highest degree with the forester's master qualities of hardiness, judgment, self-control, and the power of observation, Roosevelt brought with him to the White House so deep a sympathy with the foresters' viewpoint that it gave color and direction to all he did touching the great central problem of conservation.

There was no forester but would have liked to have him on the hardest of his trips. There was no time when his mind was not alert for the protection and advancement of the forests. His sympathy with foresters as such was well shown when he broke all presidential precedents to attend, at a private house, a meeting of the Society of American Foresters, to address its members and to meet them all personally.

Roosevelt's sympathy with forests and his genius for administration made him from the first an active and powerful supporter

of the proposal to transfer the National Forests from the General Land Office to the old Bureau of Forestry, and thus to unite the forest work of the Government under a single head. For more than three years, as I remember it, his recommendations for the transfer were made to Congress, while the personal pressure which he exerted was by far the strongest factor in our final success. Without him it would have been wholly impracticable to bring the transfer about. It was Roosevelt who made the Forest Service possible.

It tells but little of the story to say that Roosevelt saved for us more National Forests than all other Presidents put together. He not only created but defended and preserved them, and when Congress finally took from him the power to add to their number, at the last moment he saved to the people of the United States some 16,000,000 acres more of mountain forest lands. He did it by using the method which has meant so much to forestry and conservation in America, by out-thinking the opposition.

It was William T. Cox, now State Forester of Minnesota, who came to me with the suggestion that Roosevelt should save this forest land before the objectionable provision had passed both houses. When I took Cox's suggestion to him, the President approved it with enthusiasm; the Forest Service was ready; the necessary field studies had been made; the maps had been drawn; we knew what we wanted and we knew how to get it. It remained only to prepare the official proclamation for each addition to the existing National Forests.

For forty-eight hours the drafting force of the Forest Service worked night and day. As fast as they prepared the proclamations they were taken to the White House. As fast as he received them the President signed them, and sent them at once to the State Department for safe keeping. Thus Roosevelt saved from destruction and set aside for all the people an area more than half as large as the State of Pennsylvania, and did it in the short interval while the bill was passing and before it passed.

No other President has ever been, and doubtless no other ever will be, as practically familiar both with the forest and the range as was President Roosevelt. It was in the early part of his administration that the forest and grazing problem in the Southwest became the liveliest question before the Bureau of Forestry. To the huge gain of the nation as a whole, Roosevelt was thoroughly equipped

to handle it. At the recommendation of the Secretary of Interior, as I recall it, President Roosevelt made, soon after he came to the White House, a decision as to grazing on National Forests in Arizona which I thought to be unwise. Representatives of the grazing interests of that territory, including, I believe, the present Associate Forester of the United States Forest Service, came to me and set forth their objections to the President's decision. I agreed with them, and I suggested that, although the President's action had been made public, we might nevertheless put the case before him. We did so, very briefly. With his usual lightning grasp of a situation, Roosevelt saw that he had followed the wrong trail, and without the slightest care that he would be reversing himself in public, he set the matter right. I knew then that he was a great man.

It was the endless good fortune of forestry in America that while it was still young it should have had in the White House so firm, sympathetic, and understanding a friend. How much it owes to him it will never be possible accurately to determine; for the debt of forestry to Roosevelt is not to be counted only in the great things he did for it, but also in the thousands of small advances and advantages which came to American forestry because it was known to be dear to the heart of the first citizen, the greatest driving force, and the most powerful influence in America.

Forestry is firmly established among us today because Roosevelt stood behind it like a stone wall when there was little to it except hope and good intentions.\*

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## ROOSEVELT AND WILD LIFE

BY MR. EDMUND HELLER

*Naturalist, Roosevelt African Expedition*

The Roosevelt Wild Life Forest Experiment Station, the Memorial to Theodore Roosevelt, is just the sort of memorial which he would have approved. There was ever present in Roosevelt a keen interest in wild life, primarily an interest in the habits and actions of animals, in their family life, and in the way they carried on the struggle for existence. Throughout his life in the hunting field he was an enthusiastic observer of animal behavior, a far keener one than most of our expert naturalists. Nothing would have brought more joy to Roosevelt's heart than the establishment of a Wild Life Experiment Station such as you have, where animals can be studied free from artificial conditions.

Roosevelt contended for many years that faunal or field natural history studies were fully as important a feature of natural history as closet or laboratory investigations. At the present time nearly all naturalists are of this opinion, but during Roosevelt's youth, when he was a student at college, the field naturalist was considered a very superficial sort of investigator, and this deprecatory attitude kept Roosevelt from taking up faunal natural history as his life work. Today, however, all naturalists are agreed that animals react normally only in their natural or wild environment, and any observations that may be made in the laboratory must be verified in the field before they can be accepted as normal or characteristic of a particular species. Roosevelt emphasized the idea that the real laboratory in which to test theories and study animal behavior is the great out-of-doors, the field, where all life is struggling for existence and exhibiting its characteristics for our observation and study.

Colonel Roosevelt may be said to have introduced the term "faunal naturalist" to the public through his natural history writings. He demonstrated in his African expedition what a marvelous faunal naturalist he was by acquiring a great mass of new observations on the life histories of the animals with which he met. Roosevelt was a practical faunal naturalist who had scant sympathy for mere theories in zoology. As an instance of this may be cited his application of the protective coloration theories of certain modern naturalists to the actual field conditions as he found them in Africa

and America. He discovered that in many cases the authors had placed the animals in an imaginary environment to make their coloration appear protective. When Roosevelt applied the color theories to the actual field conditions he found that the coloration was, in many cases, far from protective, the actual conditions of environment often making it astonishingly advertising. It was a great boon to the study of protective coloration to have a field naturalist of the wide experience of Roosevelt call attention to the numerous errors of application as well as to the defective reasoning in many color theories.

As one of the naturalists of the Roosevelt African Expedition, it was my especial duty to preserve for the Smithsonian Institution the skins and skulls of all the game animals shot by Colonel Roosevelt. I accompanied him daily in the field so as to be near when he bagged the big game. The Colonel was a delightful companion, and on our rides afield we had long talks together regarding game animals and zoology generally. He had at his command the entire published literature concerning the game mammals and birds of the world, a feat of memory that few naturalists possess. I felt constantly while with him that I was in the presence of the foremost field naturalist of our time, as indeed I was. His indelible memory seemed to furnish him with all the known facts about any species of game animal, or any phase of vertebrate zoology, or theories concerning it. Whatever I might say regarding my experiences in collecting animals in foreign lands, or as to my knowledge of animal behavior, Roosevelt always understood every detail, and I was constantly delighted by his remarks and by the keen interest he always exhibited in the animal life about him. His exhaustive knowledge of zoology always gave him the ability to think clearly along scientific lines, and he was never led astray by misinformation or fantastic theories concerning animal life.

The Roosevelt Wild Life Forest Experiment Station will, I sincerely hope, receive the support that will enable it to assume the foremost rank among institutions devoted to the study of wild life in its natural environment. It bears the name of a man whom we all loved and admired for the whole-hearted way in which he devoted his life to America, that it might be a better place to live in; and to one whose sincerity and Americanism will ever remain a great inspiration to his countrymen. It seems peculiarly fit that this institution should commemorate such a man as Roosevelt, whose keenest enjoyment in life was the pursuit and study of animals in their native haunts.



GEORGE WALBRIDGE PERKINS

1862-1920

Late President of the Commissioners of the Palisades Interstate Park

# THE PRESENT ECONOMIC AND SOCIAL CONDITIONS AS RESULTS OF APPLIED SCIENCE AND INVENTION

BY HON. GEORGE W. PERKINS

*Late President of the Commissioners of the Palisades Interstate Park*

[This paper, by the late Hon. George W. Perkins, President of the Commissioners of the Palisades Interstate Park, was presented before the Section of Social and Economic Science of the American Association for the Advancement of Science, Dr. George F. Kuntz, Chairman, at Pittsburgh, December 29, 1917. At the conclusion of the ensuing discussion, Mr. Perkins presented me with a copy of the manuscript, from which this paper is published.

This paper has been considered particularly appropriate to publish in this *Bulletin*, because it outlines in a striking manner the precise relation that scientific research and invention bear to practical problems. It has an added interest in coming not from a professional scientific man, but from a leader in large constructive business enterprises. The dependence which he recognizes between research and practice is the same relation that the research of the Roosevelt Wild Life Station should bear to practical wild life problems.

An early number of this *Bulletin* will contain a paper by me entitled "Forestry and the Food Problem," in which it will be shown how intimately research on wild life is related to practical problems, as exemplified by the production of food for man from the non-agricultural or forest lands and waters.

Mr. Perkins was a close personal friend of Mr. Roosevelt, and his active, practical cooperation in the wild life research of the College, and of the Roosevelt Station, has been much appreciated. The first financial support which the Roosevelt Station received from outside sources was through Mr. Perkins' cooperation in the Palisades Interstate Park. His interest was further shown by his suggestions. He said: "As a matter of actual fact I think that any Roosevelt Memorial along the lines you suggest ought in some way to be connected with the Palisades Interstate Park, because, as you doubtless know, Roosevelt started it and was interested in it for many years, and it has come to be a very large undertaking. However, I do not feel like advocating this, because I am President of the Park Commission and have been since it started. However, since you bring up the question of using the Park in connection with the matter in which you are interested, I will say frankly that I think this is where it ought to be located. . . . I am just at the eve of starting out to raise a considerable sum of money for the Park. Would there be any way of our getting together on the undertaking?"

Plans were later presented to him, and were under consideration by him when overtaken by his last illness. To his wife, Evelina B. Perkins, the Station is greatly indebted for permission to publish the address that follows, as well as for the excellent portrait accompanying it.—C. C. A.]

As recently as when our fathers were boys, Samuel F. B. Morse flashed to the world the first message ever carried by electricity. That message was the query, "What hath God wrought?" How

prophetic was that query, in view of the stupendous revolution in social and industrial relations brought about since then by the use of electricity!

When miracles are mentioned our minds instinctively revert to the miracles chronicled in the Bible; and yet, with the possible exception of the raising of the dead, is there a miracle recorded in the Scriptures that is more wonderful than the miracle of the telephone? It is a miracle of a very real, practical nature; a miracle that has revolutionized every detail of our present-day life, social, financial, and industrial; a miracle that has annihilated space and brought the world so close together in its everyday relationships that we have become one small group of people, regardless of the hemisphere on which we live or the race to which we belong.

**Business Revolutionized by Science.** The revolution in business methods caused by the use of electricity has been so rapid and so complete as to cause bewilderment and consternation in the minds of multitudes of our people. They are fairly staggered by the mighty changes that have taken place, and I sincerely question whether they comprehend the fundamental cause of these mighty changes; and this lack of comprehension, in my judgment, is responsible for much of the unrest that permeates the world today. Multitudes of people engaged in everyday affairs are seeing the results, feeling the results, without understanding the causes, for they have not been furnished by the men who have produced them with sufficient information as to the causes and the results which these causes are bound to produce.

The business men of the United States have been very properly charged with having been so engrossed in money making during the last quarter of a century that they have given very little if any attention to public affairs; have given very little if any of their superb ability to public service; and have given nearly all of their ability to pursuing selfish ends, largely of a money making nature. Much can be said to substantiate this charge, but, in my judgment, a similar charge can be made against the men of science. They have been so engrossed in the fascinating problems on which they have been working that they have taken little or no time to inform the public as to the practical effect that modern scientific inventions were bound to have on the everyday lives of our people. These inventions have been placed in the hands of the people of the world within the last third of a century, and their application to business

and social affairs has overthrown and carried away a countless number of old practices and precedents. The result has been a mighty conflict between the old laws of man and the new laws of science. One or the other has had to give way. As the man-made laws were the outgrowth of centuries of effort and cumulative human knowledge, it did not seem possible that anything could come into the world that would set all this cumulative knowledge and experience to naught, and to do it over night as it were. Such, however, is the actual situation; but a vast majority of the people of the world do not realize this, do not understand it. It is also true that even a large number of our more intelligent men have refused to accept the new conditions in which we live, and have insisted on continuing under the old system, following old precedents and practices. As a result, a mighty conflict has engaged us and will continue to engage us until our people and the other peoples of the world realize that a mighty upheaval has taken place; that we have entered a new world of thought and action, dominated almost wholly by the discoveries of science within the last half century; that new codes of business morals, of finance, of industry are being set up; and that it behooves us all to give the best thought, the broadest vision, and the most unselfish devotion to the erection of a new structure that will be in harmony with the modern economic needs of our people.

Who can be of more help in this great reconstruction period than the scientist? Should he not, in the present troubled and confused thought of the world, give of his thought and time to the work of informing the people in simple, easily understood language as to what he has done to upset our old practices and customs? Should he not tell them wherein his work and accomplishments will be of benefit to the people and why? Should he not show them how impossible it is to follow old precedents and practices when he, the scientist, has by his discoveries and inventions completely wiped out old methods; when he, the scientist, has, through the miracles he has wrought, destroyed old tools and substituted new ones? Until the people as a whole realize this, it is going to be most difficult to readjust our minds sufficiently to make us capable of rearranging our social and industrial practices.

The bitter conflict that has been waged in our country during the last twenty-five years between the old laws of man and the new laws of science has been caused by a lack of understanding on the

part of our people as to what has been going on. I believe that a half century from now — yes, much sooner — our people will look back at the struggle in which we are engaged and marvel at our short-sightedness. They will look upon it then much as we nowadays look upon the witchcraft of early New England days.

**Facility of Communication Enlarges Business.** For the last twenty-five years the scientist and the inventor have almost daily placed in the hands of the merchant and the manufacturer some new instrument or device that has made it possible for him to speed up his business and reach out and do business at far distant points; some new device that has made it possible for a single human mind to do infinitely more business than any human mind ever did before. As soon as the business men began to emp'oy these devices, our old man-written laws of a quarter or half century ago were invoked to prosecute these men who, as a matter of fact, were simply u ing, in their practical everyday work, the discoveries of science and the instruments of the inventor.

How perfectly absurd it is to allow a man to invent a machine, to applaud and honor him for such invention, and the very next instant attempt to place behind the bars the business man that uses that invention. This is precisely what our country has been doing for a quarter of a century. The telegraph that Mr. Morse invented and the telephone that Mr. Bell invented have been acclaimed as the great discoveries of the age, and these men have been hailed everywhere as great benefactors of the human race; yet had it not been for these two inventions how utterly impossible it would have been to have had an interstate corporation or a so-called trust. Our politicians have told us that the tariff made the trusts. They seem to have forgotten that while we have had a tariff in this country for more than a hundred years, we have only had large interstate corporations for a matter of thirty or forty years. Intercommunication, improved and developed through the use of electricity, has been the underlying cause of the great industrial interstate and international enterprises. Raise or lower the tariff as much as you please, and leave modern intercommunication undisturbed, and your great interstate and international industrial unit of today would continue; but take away the strange force which we call electricity, and your interstate and international business concern would fall to pieces in short order. The telephone, not the tariff, made the trusts.

Intercommunication is the first requisite for doing business. In our grandfathers' day there was no concern larger than that of the store owned and operated by one individual, for the simple reason that an ox or horse team could not go very far, and they were the only methods of intercommunication. Intercommunication has rapidly improved, thanks to the marvelous work of the scientists and inventors, and as it has improved and extended business has grown from the individual to the firm, from the firm to the company, from the company to the great international corporation. The only way to stop this development, to set it back where it was in our grandfathers' day, is to eradicate the causes that have produced the results. My plea is, that our people be told all this in plain, everyday language; that they be told it by you, the men who are so largely responsible for creating the cause that has produced the result.

Until our people understand the fundamental cause, we are going to have a conflict of titanic proportions. A campaign of education is therefore imperative, for much that we learned in our youth must be consigned to the scrap-heap, discarded altogether. We must learn new methods of thought and of action. In order to do this our people must have the facts. We cannot expect them to readjust their thought and their action to such a great extent as they must without facts that are indisputable. Who can give them these facts better than the men who have created them, the scientist and the inventor?

**Cooperation the Path of Power.** Steam and electricity have been the great unifying forces in business. With their advent it becomes perfectly natural for men to reach out and command larger areas of trade, to have great, practical visions of interstate and international conquest in trade. The people as a mass do not understand this. They almost feel that supermen have come into the world in the last quarter of a century — men of far greater mental ability than ever existed before. This of course is not true. The men of the last quarter of a century have accomplished what they have, not because they were endowed by the Almighty with vastly better mental machines than their fathers possessed, but because they have been endowed by the scientist and the inventor with vastly better material machines than their forefathers possessed. If our grandfathers wished to talk with a man in the next block, they had to put on their hats and go and hunt up the man. If a man living

in Boston wished to talk to a man living in San Francisco, he had to transport his body across the continent before he could do it. Today, all that is necessary is for you to turn in your chair, pick up a tiny instrument, and command the voice of your friend whose body is on the other side of the continent, and his voice immediately sounds in your ear.

The Germans were the first people who had sufficient vision and courage to comprehend what mighty and practical changes the scientist and the inventor had wrought in business methods. They lost no time, twenty-five years ago, in shaping their future to be in keeping with the great new electrical age which the world was entering. They formed large trading companies, with great rapidity abandoned the old axiom "competition is the life of trade," and substituted the new slogan "cooperation is the life of trade." With this slogan they went out for the trade of the world. At the same moment our country took exactly the opposite course, and through the passage of the Sherman law declared that competition was and must continue to be the life of trade.

Japan is another country that has lost no time in throwing off the customs and precedents of the past and entering the great new electrical world with broad vision and splendid courage. Witness what Japan has accomplished in less than half a century. She has cast off the customs and precedents of centuries, and has reached out with great eagerness for the newer and more advanced thought of the world. She has sent her best young manhood to the universities of all the civilized countries. She has sent commissions of her most able men to all points of the globe, that they might bring back the best thought and most advanced practices in social and business relations. For the last quarter of a century precedent has meant nothing to Japan. She has thought only of the matchless opportunities that are opening to the world because of universal education and vastly improved methods of intercommunication.

In both Germany and Japan the government has worked hand in glove with its merchants and manufacturers, leaving no stone unturned to make it clear to their people that the customs of their fathers and forefathers were things of the past, and that new beliefs, methods, and practices must take the place of old ones.

**Foreign Business Methods Ahead of American.** We pride ourselves on being a new country, a progressive country, free from the shackling influence of precedent. As compared to Germany

and Japan, in their accomplishments of the last quarter of a century, we are an old, benighted country. While both Germany and Japan have been reaching out into the future with new methods and practices, our so-called statesmen and laws have tried to bind us hand and foot to an archaic past.

Fifteen years ago some of our business leaders with vision and courage attempted to organize the railroads of our great Northwest into one company, and planned to connect that railroad system on the Pacific coast with a line of steamships to Japan and China. Under an archaic law our Government attacked the enterprise, declared it illegal, and prevented its being carried out. The project was abandoned, and the ships for the Pacific were never built. Later on, the La Follette law was passed, which effectually disposed of the few ships we had remaining on the Pacific Ocean; and today, in place of our being a potential factor in the carrying trade of the Pacific, we are a negligible quantity, while Japan, which many of our people still regard as an ancient nation, has forged ahead and practically taken possession of the carrying trade of the Pacific. All this is largely due to an utter lack of understanding on the part of our so-called statesmen, and our people as a whole, to the great economic changes that have been brought into the world, not so much through the selfish desires of business men as through the potential achievements of science.

The modern commercial accomplishments of Germany are too numerous to mention, but the latest one of which I know is the creation in Berlin of what is known as a Federal Purchasing Bureau. I understand that hereafter, when a merchant in Germany wishes to procure some commodity that is to be procured outside of Germany, he will be required to go to this purchasing bureau of the Government and lodge his order. Take copper for instance: If the German copper merchants wish to buy copper, they will each go to the Government purchasing bureau and lodge their respective orders for, say, May copper. When the orders are all in, this purchasing bureau will go into the world to buy, say, fifty million pounds of copper. It will naturally come here, for we produce such large amounts of that metal. When it comes here it will find that our laws require that our copper merchants compete with one another in the sale of copper, while the German law requires that their merchants cooperate with one another in the purchase of copper. The method of Germany is, therefore, exactly

the opposite of our method. Which is right? If Germany is right, then she is acquiring from us one of our most precious metals on terms very advantageous to her and very disadvantageous to us.

**Duty of Science Toward the Public.** Twenty-five or thirty-five years ago, before science and invention had perfected electrical intercommunication, such arrangements as these did not and could not exist. But today they can and do. Not only this, but in the judgment of all thoughtful men they are but in their infancy, for science and invention are making stupendous strides in perfecting instantaneous intercommunication of thought and the more rapid transportation of our bodies and commodities from point to point. When this war shall have finished, the conquest of the air will have been accomplished. The wireless will be a practical, everyday instrument. The submarine telephone will doubtless be in operation, and international lines will then mean about as little as state lines mean now, all because of what science has accomplished.

Surely, you men of science have vast accomplishments to your credit. You have reason to be exceedingly proud of a great record of achievement; but is it not high time that you "did your bit" by making it plainer to the people as a whole what your accomplishments mean to them in their work-day lives, making them understand that while you have destroyed an old order of things you have created a new and better order of things. Would it not be highly beneficial to our country if some of your meetings and discussions were given over almost wholly to the task of enlightening the people as to why it is that old methods must be discarded for new methods? Will you not give your splendid talents to plain talks with the multitude, for a great crisis confronts the world?

It is the crisis of changing in a night, as it were, from the age of the ox team to the age of the flying machine. Certainly no such stupendous revolution has confronted the world in all its history, and unless our people can comprehend it all, can understand it all, they will not be qualified to deal with it in their homes, in their business, and above all, at the polls where representatives are selected by them to make new laws and discard old ones.



CHAUNCEY J. HAMLIN

Member of Honorary Advisory Council

# SUGGESTIONS FOR THE MANAGEMENT OF FOREST WILD LIFE IN THE ALLEGANY STATE PARK, NEW YORK

BY DR. CHARLES C. ADAMS, DIRECTOR

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## Introduction

The establishment of preserves for wild life and the purposes of natural history has made much progress in America during the past quarter of a century. At present there is urgent need of greatly increasing their number, and an equally acute need of scientific study of the best methods of managing them; and of teaching the public how most thoroughly to understand and benefit by them. Reservations cannot be simply established and then left to themselves, because by normal increase their wild life may soon become a menace to itself and may even defeat the purpose for which the preserves are established. Wild life must today be intelligently supervised; and it is quite a difficult applied science to maintain it in a normal wild state in this modern world. Those wonderful Louisiana preserves, now that they are created, must be carefully studied scientifically or they will not, in the long run, be a success. We hear much more about setting apart reservations than we do of their proper care and use; the first step of course is to establish them, and then comes the problem of their utilization. The Roosevelt Wild Life Forest Experiment Station was established primarily to investigate just such problems, and since its beginning has devoted itself to such investigations.

The Roosevelt Wild Life Station has reason to take a special interest in the Allegany State Park because of its part in the move-

ment that led to its establishment. On March 5, 1920, Mr. J. C. Brennan, President of the Erie County Society for the Protection of Fish, Birds and Game, sought the assistance of the Roosevelt Station for a fish survey of Erie County, because the Station had previously conducted fish surveys in the State. Mr. Brennan was assured of the hearty cooperation of the Station and the services of its specialist on fish, Professor T. L. Hankinson. He also conferred with Mr. Chauncey J. Hamlin, President of the Buffalo Society of Natural Sciences, who had already secured the cooperation of the Erie County Society. President Hamlin came to Syracuse to consult about these plans, and while in conference with Professor Henry R. Francis, of the Department of Forest Recreation in the College of Forestry, and myself, both of whom had previously had experience in the Palisades Interstate Park on the Hudson River, it was suggested that there ought to be established in Western New York a large public forest which should embrace every phase of modern park activity, including fishing, hunting and camping. For years sportsmen and conservationists in Western New York had been talking about the need of a wild life preserve there, but nothing had taken definite shape. Following this conference, Mr. Hamlin, working with Mr. Hamilton Ward, Mr. Brennan and Mr. James Savage, interested a group of public-spirited citizens, including ex-Senator A. T. Fancher of Salamanca, and several gentlemen from Chautauqua County, including Mr. F. G. Kaiser, and an active organization was soon under way. Dean F. F. Moon had given assurance of full cooperation on the part of the College of Forestry. Later President Hamlin visited the Palisades Interstate Park, and with the assistance of Mr. Edward F. Brown, formerly Superintendent, Camp Department of the Palisades Park, organized local committees in New York City and in Albany designed to promote these plans.

In behalf of the committee, Mr. Brown visited Cattaraugus County and prepared a report suggesting plans and legislation for the proposed park. A brief of this report was published in 1920 under the title, "A State Park for Western New York." At Mr. Brown's request I prepared a tentative plan for the wild life and the natural history resources of the proposed park. This was incorporated in his unpublished report and brief mention of it was made in the published abstract. Through the activity of the Buffalo committee, Mr. Hamilton Ward and Senator Henry W. Hill, there was drafted a bill authorizing the establishment of the

Allegany State Park, and it became a law in May, 1921, with the signature of Governor Nathan A. Miller.

The Roosevelt Station has thus, from the inception of the plans which resulted in the establishment of the Park, been actively interested in its progress. As but few working plans for wild life parks have been published, and as new parks are continually being established throughout the country, the publication of these suggestions is intended to assist the men and women promoting them. It should be understood that these plans were formulated to meet a specific case, and yet their application is widespread. At the end of this paper I give a copy of the law under which the Allegany Park is established and to be conducted (see pp. 75-81); and references to publications that will be of special value to those interested in this phase of wild life work.

It should be borne in mind that throughout the plans for this Park it is intended to practice modern reforestation of the much cut-over land, and establish there a forest so managed as to produce a permanent yield of timber, except in the area reserved for the Natural History Sanctuary and in the suggested experimental "Roosevelt Field Station." Its system of management is intended to harmonize with the fullest and best public use of this large forest area. The plan will provide not only for the permanent supply of timber needed for construction of buildings, for camp-fires, and other purposes, and will shelter many kinds of plants and animals native in such a forest, but it will also provide the beautiful natural appearing woodland background desired for a camping park. In time, such a forest will become an important source of revenue for maintenance of the Park, and it should be made an example showing how all uses of the forest can be harmonized when intelligently organized.

The Legislature has authorized the establishment of the Allegany State Park in Cattaraugus County, about seventy miles south of Buffalo, near the State line, in the great bend of the Allegheny River as it swings up into New York from Pennsylvania in the vicinity of Salamanca. This is a part of the Appalachian plateau, lying at a level of about two thousand feet above the sea, while entrenched in this upland lies the beautiful open valley of the Allegheny River, flowing about a thousand feet below. Many of the tributary streams, such as Quaker and Wolf Runs, are fine trout brooks. The whole region was once densely forested, but has been cut over repeatedly. An occasional bear or deer is now



Fig. 1. Allegany State Park, looking up Quaker Run from Hotchkiss Hill, showing general character of the topography.



Fig. 2. Mature forest in the "Big Basin," near the head of Stoddard Creek, Allegany State Park.



Fig. 1. View of Quaker Run, Allegany State Park.



Fig. 2. A bayou in Tunungwant Valley, Allegany State Park.

found there, and hares, cotton-tail rabbits, grouse and woodcock still abound. The region is thus already well stocked, and intelligent fire protection and supervision will make the Park an excellent refuge for every sort of wild creature native to that part of the State.

### **Angling and Hunting Preserves**

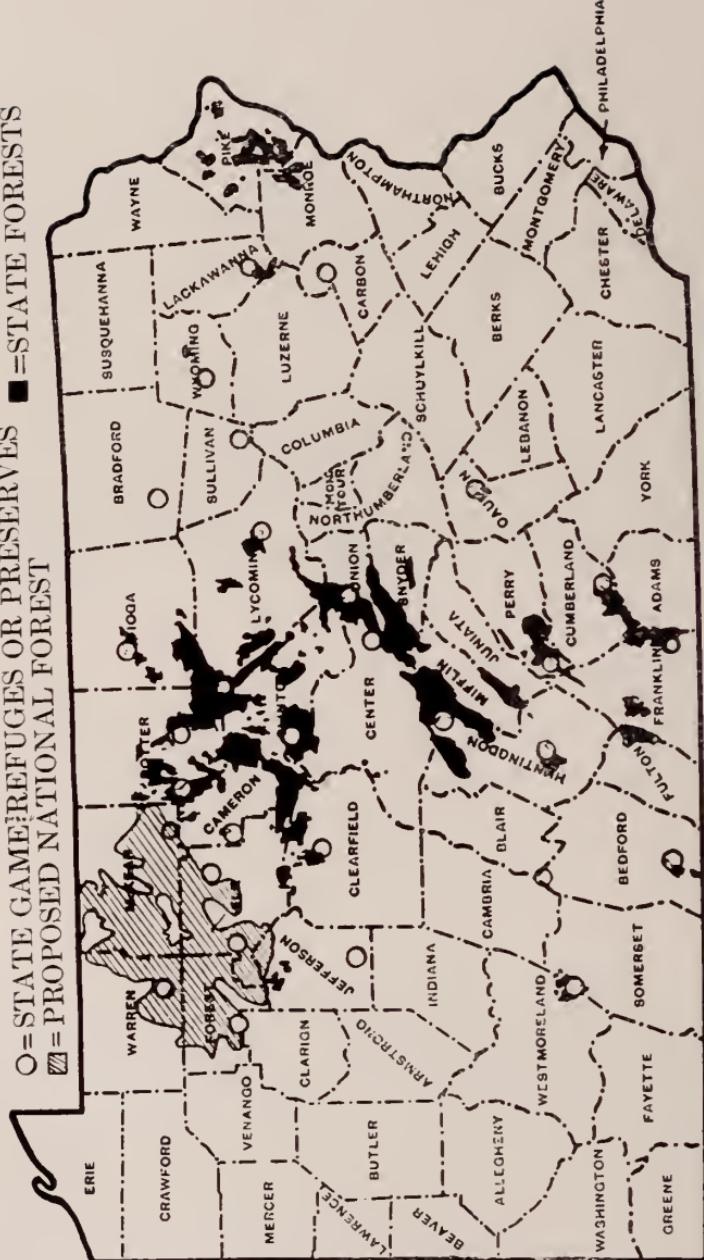
A large public angling and hunting preserve is needed in Western New York, where deer, bear, grouse, wild turkey, woodcock, hares and rabbits, as well as trout and other fish and game, can thrive in abundance, so that the people may have an opportunity for healthful outdoor recreation near at hand. That such a preserve should abound in fish and game can only be assured where there is a large area, carefully stocked, protected and supervised in a thoroughly modern fashion. Park wardens, wild life keepers, and park police can assure reasonable protection; and under the management of competent fish and game keepers, large breeding sanctuaries (where no killing will be permitted) can be permanently maintained, affording excellent sport year after year for a large number of persons.

Under the Pennsylvania system of game preserves, according to John M. Phillips ('20), one of the Pennsylvania Game Commissioners, a central area bounded by a single-wired fence waist high, marks the sanctuary within which no killing of game is allowed, while the surrounding area is a public hunting ground during the regular open season. Under this system game has greatly increased in numbers in Pennsylvania. The location of these preserves is shown on the map of Pennsylvania, p. 68.

It has been found advantageous to make these preserves of about three thousand acres, and not to exceed ten miles in their longest diameter. They are situated in the midst of a forested area. Game vermin on these tracts is killed off persistently, and thorough fire protection is given. A keeper's duties not only include protection, but also the planting of fruits, nuts, berries and other vegetation to provide food and shelter for the birds and other animals. The preserves are fully posted and are protected by fire lines. Whenever possible, in the Allegany Park, fish and game should be given equal protection, and in some cases it may be necessary to establish special fish preserves, independent of the game sanctuary, in order to protect certain valuable breeding grounds. (See also Scudder, '17).

## LEGEND

○ = STATE GAME REFUGES OR PRESERVES   ■ = STATE FORESTS  
■ = PROPOSED NATIONAL FOREST



Map showing the location of the Pennsylvania State Game Refuges and Preserves, in relation to the State Forests and the proposed National Forest.

There are today about thirty State game preserves in Pennsylvania, including one in Tioga and three in Potter County, these counties being on the New York State line. There are none in Erie, Warren or McKeen Counties, which are also adjacent to the State line and the Allegany State Park. To equip one of these preserves costs about \$2,000, and its maintenance requires about \$1,200. The system has completely restored good hunting in Pennsylvania, and would, with intensive care made possible by wardens, keepers, and police, properly justify a moderate fee for the enjoyment of these privileges. By such means a fund could be accumulated to pay at least in part, for the wild life maintenance.

In the present Park there should be several of these preserves, particularly in the remote areas, because other park visitors must be fully protected from accidental shooting by hunters, or the fear of stray bullets. If tramping trails are laid out in the hunting preserve, they should therefore be closed during the hunting season. Shelters and camps should be provided for sportsmen in the hunting areas.

The preserve method for maintaining game in the Allegany Park should be carefully adapted and applied to angling preserves. (See Kendall, '18; Adams, Hankinson and Kendall, '19). This may involve a system of rotation, by periodically opening and closing certain areas, in order to keep the waters fully stocked. All game preserves should occupy the most remote and inaccessible parts of the Park if they are to be developed to the highest degree, as by this means the greatest acreage can be secured, with the least disturbance of the game by the visitors and with the least risk to human life by accidental shooting. The hunting season of course follows the summer season with its maximum number of Park visitors, but there should be absolute safety from hunters throughout the year.

### A Natural History Preserve

In addition to the angling and hunting preserves just discussed, a large area of the Park should be set aside for a Natural History Preserve where no hunting or angling should be allowed, and where plants and animals should be carefully protected in as nearly a natural state as is possible (Adams, '13). This area should be devoted mainly to the scientific, educational and recreational interests that cluster about natural history in all of its varied phases, as expressed in the popular regard for flowers, trees, birds, rocks, minerals and fossils. Tramping and boating should be encouraged and their needs amply provided for. (See Buxton, '84, preface;

Conwentz, '09). This area might be divided into two sections, the first constituting a wild life exhibit.

**a. A Wild Life Exhibit.** Here would be assembled animals both formerly and now native to the region, and this animal collection should be made easily accessible to the public. There should be represented the buffalo, bear, deer, beaver, elk, wildcat, wolf, wild turkey, grouse, squirrels and many others, all in suitable quarters, so that those with limited time in the Park might easily become acquainted with the native animals of the region. The recreational and educational value of this, so limited, would be very great, and it would be a very attractive feature of perennial interest to automobile visitors as well as to campers. (See Smith, '14).

A second section of this preserve should form a natural history sanctuary.

**b. A Natural History Sanctuary.** To those who are camping in the Park, or who wish to make extended walking trips through it, as well as to amateur naturalists and to pupils and students of our schools of all kinds, the Natural History Sanctuary should be particularly attractive (Adams, '10, '21). In this area there should be preserved the best remaining fragments of the *virgin forest vegetation*, and these should be very carefully protected, not only from fire but also from all other harmful influences. Even the picking of flowers to excess, or the collecting of animals, should be restricted. There is, however, as much reason for allowing boys and girls, and pupils and students, to pick flowers and to collect natural history specimens for either pleasure or study, as there is for allowing others to catch and kill fish and game, or to wear out the grass in our city parks. There is, of course, equal justification for spending money to maintain a natural history preserve as for spending money to stock the woods and waters with fish and game. We have only been slower in recognizing the educational, recreational, and scientific value of this aspect of natural history. The park authorities should fully recognize this need, and carefully encourage and wisely guide it, so as to secure a proper use and appreciation of all natural history objects to the best advantage. Special permits should be given to collect natural history specimens: or this might even be done without a permit when accompanied by an official Nature Guide or authorized leader.

The Natural History Sanctuary should be as diversified physically as is possible in order to include the greatest variety of animals and plants, and their various associations. In this area there should

be preserved the best samples of virgin forest and other natural vegetation in the region, and any specially valuable or interesting geological exposures or physiographic features. A systematic effort should be made to *restore in this area as near virgin conditions as possible*, so that in a generation from now a good sample of almost primeval forest, with its native plants and animals, would be available to the public, not only as a memorial or monument, but also for educational, scientific and recreational purposes. (See Conwentz, '09; Adams, '13; Sumner, '20). Special precautions should be taken to make fire protection for this area as near perfect as is humanly possible. Such a sanctuary should not be fenced unless fencing is unavoidable, but should be carefully guarded by a high grade of specially trained protectors or Nature Guides who would not only guard but also help to maintain the preserve as natural as possible, and who would be able to assist in teaching the public a proper appreciation of natural history. The Nature Guides for this sanctuary should keep thoroughly posted as to the conditions on the area, and should see that the sanctuary is not injured by the visitors. This would necessitate not only guarding especially valuable, interesting or rare objects, but also insuring the proper rotation of use by the public, so that the trails and special features may be allowed time to recuperate after severe use. A large area within this sanctuary should be made an *absolutely wild preserve* of virgin conditions. If necessary, special areas should be purchased for this purpose.

A small museum (see Smith, '14) and a nature library (Graves, '19) should form a part of the equipment of this sanctuary, and there should be provided also special camping sites, shelters and automobile parking facilities. The museum and library would be particularly valuable to campers, to visiting groups of school children, and to those specially interested in one or another branch of natural history.

This sanctuary should have a carefully worked out system of marked trails, so that city people not familiar with the woods would have no hesitation in penetrating the forest solitudes (Adams, '10, '21). A good series of pocket maps ought to be made available.

The sanctuary might not be fenced but might be marked by two strands of wire, and would materially assist, by its overflow, in stocking all other parts of the Park with wild life,—even the angling and hunting preserves.

### A "Roosevelt Field Station" for the Roosevelt Wild Life Forest Experiment Station

Adjacent to the sanctuary there should be located on a large, carefully chosen tract, a "Roosevelt Field Station" or field laboratory for the Roosevelt Wild Life Forest Experiment Station. The Wild Life Station was authorized by the Legislature as a Memorial to Theodore Roosevelt because of his great interest in wild life, and is devoted to the investigation of the life histories, habits, and methods of management of forest animals of all kinds. Just such forest management and utilization problems as have been alluded to—and they will constantly arise in connection with the administration of the Angling and Hunting Preserves and the Natural History Sanctuary, as well as in all other parts of the proposed Allegany Park—will require attention. The College of Forestry already possesses, near Red House, in the proposed park area, about one thousand acres of forest land, and is thus already deeply interested in this region. There are a large number of scientific and technical problems in connection with increasing and protecting fish and game in the Park, and in the management of the Natural History Sanctuary, which will require special study. The Roosevelt Wild Life Station, since its establishment in May, 1919, has been working on allied wild life problems in the Palisades Interstate Park along the Hudson River, and elsewhere in the State. With its technical staff it is particularly well fitted to aid and cooperate in the present undertaking. The members of the Station staff have been engaged in similar work for many years. In the Palisades Interstate Park the Roosevelt Station has, for example, made investigations on the fish, birds, methods of controlling the "water bloom" in bathing lakes, mosquito control by fish, and the use of woodland trails in the study of the natural history of forest life. Similar problems arise in all large parks and become increasingly complicated with intensive use.

To conduct properly some of these studies on wild life, the "Roosevelt Field Station" should be fenced, in order to insure *undisturbed investigations and experiments*. For this reason also, it would be best to have this Field Station somewhat removed from the main centers where campers and visitors gather, as well as at a safe distance from the Hunting Preserve.

Upon a comprehensive plan of this character the wild life and natural history interests of the Allegany State Park would be per-

petuated and improved, and the means for attacking many problems that require technical and scientific skill for their solution would be immediately available to the Park authorities.

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**Law Establishing the Allegany State Park**

AN ACT to provide for the location, creation and management of the Allegany State Park in Cattaraugus county and for the purchase of lands; and making an appropriation therefor.

Became a law May 2, 1921, with the approval of the Governor. Passed, three-fifths being present.

*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

Section 1. The Allegany State Park is hereby located and created within the county of Cattaraugus, state of New York, and shall include the lands owned or hereafter acquired by the state of New York within the following described boundaries, to wit: Commencing at a point in the town of Carrollton, where the western boundary of the right of way of the Erie Railroad Company intersects the state line between the states of New York and Pennsylvania; running thence northerly along said western boundary of said right of way to the southern boundary of the Allegany Indian reservation; thence along the said boundary of said reservation through the towns of Carrollton, Great Valley, Salamanca, Red House, Cold Spring, Elko and South Valley, to the intersection of said boundary of said reservation with the said state line; thence easterly along said state line to the place of beginning, excepting and reserving therefrom any part of the city of Salamanca, and any part of the village of Limestone included in the land above described. All of the lands hereinbefore described, and hereafter acquired by the state for such state park shall be forever reserved and maintained for the use of all the people, but the said Allegany State Park shall not constitute a part of the forest preserve.

§ 2. Within thirty days after the going into effect of this act there shall be appointed by the governor of this state, by and with the consent of the senate, five commissioners, who shall be citizens and residents of the state of New York, and who shall constitute, and are hereby appointed and constituted a board of commissioners by the name and style of "commissioners of Allegany State Park." Such commissioners shall serve terms of from one to five years respectively, and the governor shall designate the terms of each of said first appointed commissioners who shall hold office for the terms of their respective appointments, and until others are appointed in their places, and all such commissioners after the first appointment shall be appointed by the governor by and with the consent of the senate and shall hold office for the full term of five years and until others have been appointed in their places. Vacancies in the commission caused by death, removal, resignation, refusal or inability to act, or removal from the state shall be filled by the governor by appointment for the unexpired term only. No member of said board shall receive any compensation for his services

as commissioner, but each commissioner shall be entitled to receive his actual disbursements and expenses in performing the duties of his office. The governor may remove a member of such commission for inefficiency, neglect of duty or misconduct in office, giving him a copy of the charges against him and an opportunity of being publicly heard in person or by counsel in his own defense upon not less than ten days' notice. If such member shall be removed the governor shall file in the office of the secretary of state a complete statement of all charges made against such member and his findings thereon, together with a complete record of the proceedings.

§ 3. In case the state of Pennsylvania proceeds to acquire lands adjoining the boundaries of the said state park to be used for a similar purpose the commission is authorized to co-operate with the said state of Pennsylvania and such representatives as said state may designate for that purpose for the joint control and operation of the Allegany State Park and the adjoining lands in the state of Pennsylvania.

§ 4. Such commissioners and their successors are authorized to sue and bring proceedings in the name of the people of the state of New York, to use a common seal, and make and adopt by-laws to regulate its proceedings. They shall keep a record of their proceedings and make an annual report to the legislature. Such commissioners shall annually choose from among their members a chairman and secretary, and appoint such other officers and such other employees as the commission deems necessary to carry out the purposes of this act. All patrolmen and game wardens appointed by the commission may be uniformed and shall have within the limits of the property of the Allegany State Park, all the powers, duties and liabilities of constables of towns in the execution of criminal process. The board of commissioners may also determine the duties and compensation of such employees and may appoint and remove them at pleasure and make all reasonable rules and regulations respecting the same. The board of commissioners may also build necessary roads and bridges within the boundaries of the said park, erect camps, and may provide and operate such other facilities for the use and enjoyment of such park by the public and for increasing the accessibility of the park to such public, as the board may determine necessary or expedient and the said board may also provide at its discretion by a proper rule or regulation for the terms upon which and the manner in which all such facilities may be used, and may do and perform all things necessary for the execution of the purposes of this act, and have general supervision and control over said park. Such board shall have and maintain a suitable office where its maps, plans, documents, records and acts shall be kept subject to public inspection at such times and under such reasonable regulations as the board shall determine.

§ 5. Within sixty days after this act takes effect, such commissioners shall convene and organize, as hereinbefore provided,

and adopt a common seal. A majority of such commission shall constitute a quorum for the transaction of business.

§ 6. The board of commissioners shall have power to, and shall as soon as may be, after its organization, proceed to select, locate and acquire lands in the name of the people of the state of New York, within the foregoing described boundaries, and shall so far as their appropriation permits, proceed to make the same available for use as a public park and to provide for the protection and propagation of fish and game thereon and for the reforestation of the same.

§ 7. The commission shall, with the approval of the governor, have the power and authority to appropriate real and personal property, in the manner and under the conditions herein defined:

1. **Purposes.** The commission may enter upon and take possession of any lands or waters or both, or of any forests and rights in timber upon any lands included now, or hereafter to be included, within the Allegany State Park, the appropriation of which, in the judgment of said commission, shall be necessary for public park purposes, or for the purpose of the propagation, protection and conservation of fish and game.

2. **Description of land.** An accurate description of such property so entered upon and appropriated shall be made by the commission, who shall certify under its seal that the description is correct, and shall endorse thereon a notice that the property described therein is appropriated by the people of the state of New York for the purpose described in this section. The original of such description and certificate shall be filed in the office of the secretary of state. The Allegany State Park commission may make such additional copies of this certificate and description as may be necessary and certify the same.

3. **Service of notice.** The said commission shall thereupon cause a duplicate of said description and certificate, with notice of the date of filing thereof in the office of said secretary of state, to be served on the owner or owners of the lands, forests, and rights in timber upon such lands and waters so appropriated; and from the time of such service the entry upon and appropriation by the people of the state of the property described in such notice shall be deemed complete, and thereupon such property shall become, and be, the property of the people of the state. Such notice shall be conclusive evidence of an entry and appropriation by the state; but the service of such notice shall raise no presumption that the lands, forests and rights in timber upon such lands described therein are private property.

4. **Manner of service.** Service of the notice and papers provided for under subdivision three must be personal if the person to be served can be found within the state. If the said commission shall not be able to serve said notice and papers or to cause the same to be served upon the owner or owners personally within

the state, after making an effort so to do which said commission shall deem to be reasonable and proper, service may be made by filing said notice and papers in the office of the county clerk of the county wherein the property so appropriated is situated and by causing such notice and papers to be recorded in the books used for recording deeds in the office of said clerk. On the filing of said notice and papers with said clerk, it shall be the duty of said clerk to record same in the books used for recording deeds in the office of said clerk and to index the name of the person or persons to whom said notice is directed as a grantor in an index book to be kept by said clerk.

In case such service is made by filing said notice and papers in the office of the county clerk, any person so served may at any time thereafter file a claim with the court of claims, against the state, notwithstanding the two year limitation provided by this article or by article one, title three of chapter three of the code of civil procedure, excepting that if the person so served shall be brought in and made a party to any claim or proceeding pending in the court of claims or before a referee having jurisdiction to hear, try or determine a pending claim, such person so brought in and made a party shall not thereafter file a claim against the state on account of such appropriation, in addition to or in substitution for the claim to which he has been made a party, unless he shall file such additional or substituted claim within three months from the time he is so brought in and made a party.

**5. Description and certificates to be recorded.** If service be personal, the said commission shall thereupon cause a copy of such notice and papers, together with an affidavit of due service thereof on such owner or owners, to be filed and recorded in the same manner as provided in subdivision four, and it shall be the duty of said clerk to record and index same as provided in subdivision four in case service is other than personal; and the record of such notice, and of such proof of personal service, shall be presumptive evidence of due service thereof.

**6. Adjustment of claims by agreement.** Claims for the value of the property appropriated, and for legal damages caused by any such appropriation, may be adjusted by the commission, if the amount thereof can be agreed upon with the owner or owners thereof. Upon making any such adjustment and agreement the commission shall deliver to the comptroller a certificate stating the amount due to said owner on account of such appropriation of his land or other property, and the amount so fixed shall be paid by the treasurer upon the warrant of the comptroller.

**7. Court of claims, jurisdiction of.** If the commission and the owner or owners of the property so appropriated fail to agree upon the value of such property, or upon the amount of legal damages resulting from such appropriation, within one year after the service of the notice and papers provided for in section sixty-eight

of this chapter, such owner may, within two years after the service of such notice and papers, present to the court of claims a claim for the value of such land and legal damages; and said court shall have jurisdiction to hear and determine such claim and render judgment thereon. Upon filing in the office of said commission, and in the office of the comptroller, a certified copy of the judgment of the court of claims, and a certificate of the attorney-general that no appeal from such judgment has been, or will be taken, by the state, or if an appeal has been taken, a certified copy of the final judgment of the appellate court affirming in whole or in part the judgment of the court of claims, the comptroller shall issue his warrant for the payment of the amount due the claimant by such judgment, with interest from the date of the judgment until the thirtieth day after the entry of such final judgment, and such amount shall be paid by the treasurer.

**8. Court of claims to examine property.** The court of claims, if requested by the claimant or the attorney-general, shall examine the real property affected by the claim of damages for the appropriation thereof and take testimony in relation thereto in the county where such property or a part thereof is situated.

**9. Oil, gas, mineral and lumber rights may be excepted.** The commission may except from the purchase of any lands or waters taken under this article, any oil, gas, lumber or mineral rights thereon, with the right of access thereto, which exception must be stated in the description filed in the office of the secretary of state and in the notice served on the owner, as provided by this section.

Nothing in this section shall prevent the subsequent appropriation by the commission of any rights so excepted.

**10. Adjustment of claims for trespass or other injuries.** In cases of trespasses or other injuries to lands or property purchased or acquired by the state, the commission may settle and adjust any claims for damages due to the state on account of any such trespasses or other injuries to property or interests of the state, or penalties incurred by reason of such trespasses or otherwise, and the amount of such damages or penalties so adjusted shall be deducted from the original compensation agreed to be paid for the land, or for damages, or from a judgment rendered by the court of claims on account of the appropriation of such land. A judgment recovered by the state for such a trespass or for a penalty shall likewise be deducted from the amount of such compensation or judgment.

**11. Judgments.** When a judgment for damages is rendered for the appropriation of any lands or waters for the purposes specified in this article, and it appears that there is any lien or incumbrance upon the property so appropriated, the amount of such lien shall be stated in the judgment, and the comptroller may deposit the amount awarded to the claimant in any bank in which moneys belonging to the state may be deposited, to the account of such judgment, to

be paid and distributed to the persons entitled to the same as directed by the judgment.

**12. Costs and disbursements; when offer made.** If an offer is made by said commission for the value of land appropriated, or for damages caused by such appropriation, and such offer is not accepted, and the recovery in the court of claims exceeds the offer, the claimant is entitled to costs and disbursements as in an action in the supreme court, which shall be allowed and taxed by the court of claims and included in its judgment. If in such a case the recovery in the court of claims does not exceed the offer, costs and disbursements to be taxed shall be awarded in favor of the state against the claimant and deducted from the amount awarded to him; or if no amount is awarded, judgment shall be entered in favor of the state against the claimant for such costs and disbursements. If an offer is not accepted, it cannot be given in evidence on the trial.

§ 8. Such commissioners are authorized and empowered, within such park, through their agents and employees, to enforce, in the name of the people of the state of New York, the penalties and conduct the prosecution set forth in the conservation law, and such commission shall have the power to create and establish closed seasons for fish and game within such park as in its judgment may be necessary for the propagation and protection of such game and fish, and may make suitable regulations for the capture, killing and transportation thereof, and such commission shall have power and authority to propagate game and fish for the stocking of the said Allegany State Park, and to make regulations and rules which shall be binding upon all persons within the boundaries of the aforesaid Allegany State Park, whether upon lands owned by the state or otherwise for the purposes of fire, game and fish protection, and to establish and enforce suitable penalties for the violation thereof.

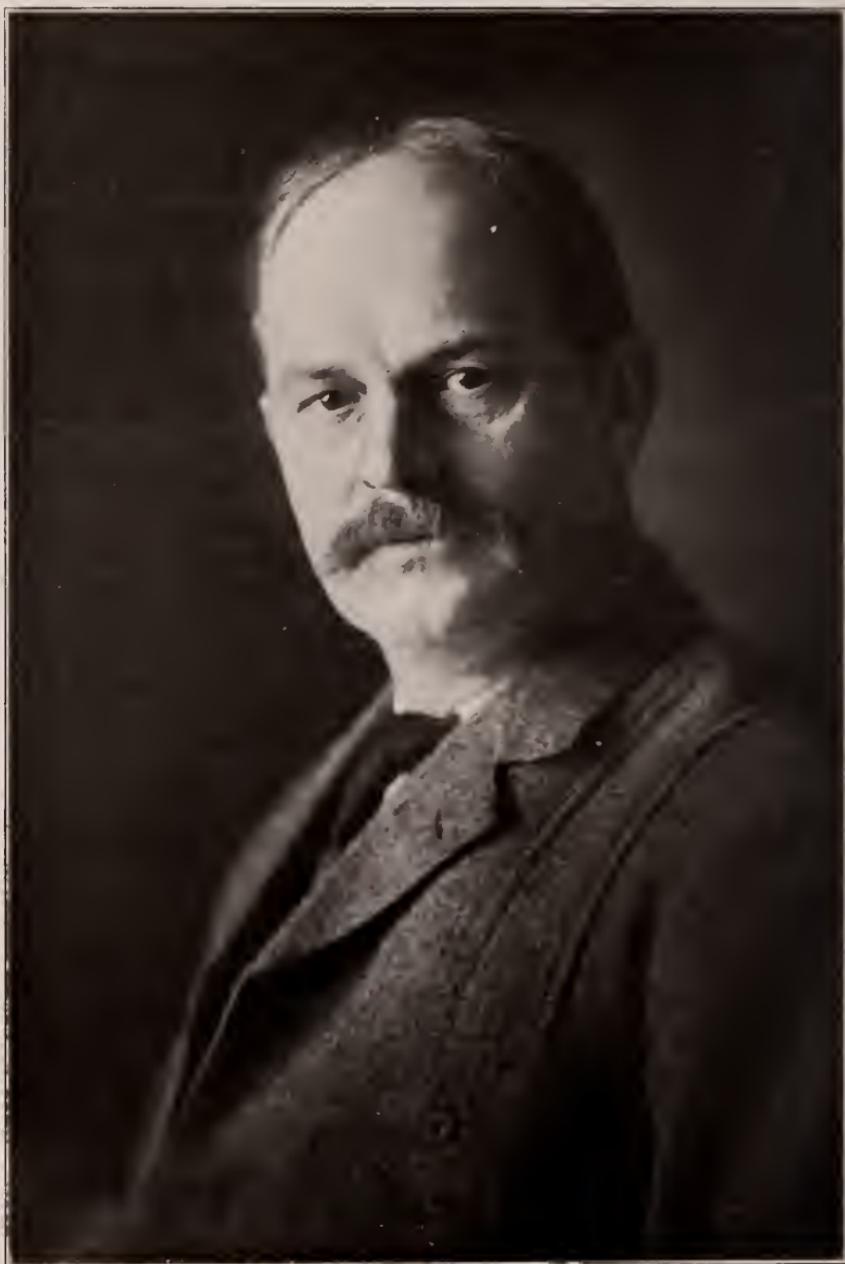
§ 9. Such commissioners shall have the power, in the name of the people of the state of New York, to acquire, maintain and make available for use as a public park, the lands located as aforesaid, and for this purpose shall have the power to take, in the name of the people of the state of New York, in fee or otherwise, by lease, purchase, gift, devise, or through the procedure heretofore set forth, the said lands or any of them, and any rights, interests and easements therein, and to receive by gift, devise or contribution, money to be used in acquiring and improving the said lands or any of them, and the said board shall also have power, in the name of the people of the state of New York, to receive and administer for park purposes, any gift or devise of personal property, or any land or rights in land outside the areas defined in said park, adjoining the same, and it shall be its duty to preserve, care for and lay out and improve the said park, and it shall have power to lay out, construct and maintain roads and pathways over the said park, to

dam the streams therein, except the main stream of the Allegheny river, and to lay out and construct and maintain roads between and connecting any separate portion of said park, and for this purpose to acquire rights of way upon and across any intervening lands, and authority is conferred upon such commission to build and maintain roads across the Allegany Indian reservation for this purpose, and in case the state of Pennsylvania shall acquire lands for a state park, adjoining the lands herein described, to connect such roads with roads so laid out in the state of Pennsylvania and to maintain such lands within the state of New York so that the same may form a continuous park with the lands acquired by the state of Pennsylvania, and to do all things necessary in their judgment to carry out the purposes of this act.

§ 10. The sum of twenty-five thousand dollars (\$25,000), or so much thereof as may be necessary, payable out of any moneys in the treasury not otherwise appropriated, is hereby appropriated to carry out the provisions of this act. No part of the said sum shall be available for any purpose specified in this act, until the certificate of the commissioners, provided to be appointed herein, has been filed in the office of the state comptroller, showing that the sum of twenty-five thousand dollars (\$25,000) has been donated by individuals or corporations and deposited to the credit of the commission in a bank or trust company to be designated by the commission, to be used for some or all of the purposes specified in this act. Payments from said appropriation shall only be made upon itemized accounts, duly verified, certified and approved by the chairman of the commission, by the state treasurer on the warrant of the comptroller.

§ 11. This act shall take effect immediately.

[Laws of New York, Chapter 468, 1921.]



FRANK M. CHAPMAN

Member of Honorary Advisory Council

AIMS AND STATUS OF PLANT AND ANIMAL  
PRESERVE WORK IN EUROPE, WITH  
SPECIAL REFERENCE TO GERMANY,  
INCLUDING A LIST OF THE  
MOST IMPORTANT PUB-  
LICATIONS ON THESE  
PRESERVES

By DR. THEODOR G. AHRENS

Berlin, Wilmersdorf, Germany

Contents

1. Introduction: Conservation in Europe.
2. Bird Protection in Germany.
3. Plant and Nature Protection in Germany.
4. Organizations and Administration.
5. Publications.

Introduction: Conservation in Europe

As the aims and status of conservation in Germany constitute the main body of this paper, a few general remarks on the care and protection of nature and natural monuments in other European countries are in order. To obtain protection of natural monuments there are three general ways: by voluntary, by administrative, and by legislative help. In the confines of the former Austrian Empire about 11,000 acres of primeval woods and meadows surrounding Vienna were purchased and reserved. Unfortunately, the recent deplorable economic conditions in Vienna have caused great numbers of trees in these reserves to be cut down for firewood by the inhabitants.

Three hundred and fifty acres in Moravia, with growths of *Juniperus nana* and *Salix herbacca*, and some 285 acres in the Böhmerwald, for the purpose of safeguarding a primitive forest tract in Central Europe, have been set aside and protected. *Picea excelsa* and *Abies pectinata* occur in considerable amounts there. In Belgium the forest of Soignes, near Brussels, and various plant associations of individual interest in different parts of the country have been preserved.

In Great Britain there exists a "National Trust for Places of Historic Interest or Natural Beauty" which was founded in 1895. This association has had deeded to it and holds quite a number of large and small areas of natural beauty in various parts of the country. Under the British Government a number of State Forest Preserves exist, among which the famous New Forest, in Hampshire, and Epping Forest should be mentioned. A noteworthy plant reserve is Burnham Beeches, near Slough, a wooded tract of 315 acres, in which stand beeches ten to twenty feet in circumference, oaks fifteen feet in circumference, and other ancient trees. There are also many bird reserves on the coasts of the United Kingdom, chiefly for sea birds.

In Denmark a number of interesting moors and areas with rare plants and plant associations have been preserved. Birds enjoy also far-reaching care and protection.

In France forest areas with noteworthy trees and plants in several forests, notably Fontainebleau, are protected, and efforts are being made to extend protection of nature in various ways.

In Holland the Naardermeer, in the south of the Zuider See, a breeding place and resort for many rare birds, is preserved.

Sweden has reserved several natural park areas of scenic and botanical interest. In one of them the bears, which are threatened with extinction, are protected. Switzerland guards its rare plants zealously by administrative ordinances, and with the aid of several associations interested, for example, the "Association pour la Protection des Plantes" at Geneva. Switzerland has a beautiful national park in southeastern Engadine, a territory on the Inn, with the wild valleys of Cluoza and Tantermozza and several adjoining districts; and Italy has had the intention to create a national park in continuation of the Swiss Val Cluoza. The area of the Swiss park is about ninety-five square kilometers, and it comprises pine forests and interesting plant and animal associations.

### **Bird Protection in Germany**

An interest in birds and in their protection and preservation has always been maintained in Germany. Various local regulations to protect birds were made from time to time in the eighteenth and beginning of the nineteenth century, but Prof. K. Th. Liebe, who worked for bird preservation in the second half of the past century in Thuringia, in particular, and wrote numerous works about it, may

be looked upon as the originator of scientific and ethical bird protection. The movement increased, and in 1876 a law regarding the protection of useful birds was presented to the Reichstag. This measure failed to pass, but several of the federal states made in the meantime new protective regulations or enforced old ones; and finally in 1884, at the first International Congress of Ornithologists in Vienna, resolutions of importance for the birds came up for discussion. The same may be said of the second International Congress in Budapest, in 1892; and at the third, in Paris, 1902, an agreement was made between Belgium, Germany, France, Greece, Lichtenstein, Luxemburg, Monaco, Austria-Hungary, Portugal, Sweden, Switzerland and Spain, regulating the protection of birds useful for agriculture. This was ratified by the German Reichstag on June 5, 1902. Before this, in March, 1888, a general bird protection measure had passed the Reichstag for Germany alone. This law was revised and passed again in May, 1908, and was a considerable improvement upon that of 1888. Berlepsch, in his elaboration of methods to retain the birds and to facilitate their existence; Conwentz, by the founding of the State Bureau for the Care of Natural Monuments; and countless societies for the promotion of knowledge and protection of birds, advanced the cause of the birds greatly.

The first suggestion for creating Bird Refuges in Germany dates from 1883, but the first actual refuge is the Memmert, a sandbank between Borkum and Juist, in the North Sea, founded in 1907 by the "German Society for the Protection of Bird Life." Gulls and terns are the principal birds breeding there. Two armed guards are stationed on the island, and in 1920 a very satisfactory increase was noted — about 4,000 pairs of *Larus argentatus*, 2,000 *Sterna macrura*, and other species in various quantities.

On the islands of Mellum, Juist, Baltrum, and Langeoog (East Friesian Islands), there are a considerable number of bird refuges. On some, guards are maintained, as on Langeoog; on others, as is the case of Baltrum, the inhabitants guard the birds and their nests to a certain extent. The bird colony of Norderney, however, was destroyed during the war. Competent observers believe that the worst dangers for those interesting and characteristic colonies are past, and that the near future will make up for the losses sustained in the past bad years. At the mouth of the Elbe we find a refuge on the island of Neuwerk, and another on Trischen farther north, where there are colonies of sea birds, notably terns.

On the west coast of Schleswig-Holstein are three refuges; Norderoog, Jordsand, and Ellenbogen, which were founded by the "Jordsand Association" of Hamburg and promoted by the well-known ornithologist Dr. Hennicke, of Gera. All of these refuges have suffered severely from the war and its effects; and Ellenbogen, which has been ceded to Denmark has suffered a total loss of its colony by storms and egg robbery.

In the Baltic Sea the founding of refuges dates from 1909. One of the first is a peninsula known as Priwall, at the mouth of the Trave, in Mecklenburg, and Langenwerder, in the Bay of Wismar, both of which are subsidized by the Mecklenburg government. Langenwerder adjoins the large Island of Poel, where prior to the revolution there were considerable colonies of sea and other birds. Here, as elsewhere, lawlessness in general, and the very widespread lack of food among the poorer classes, have encouraged egg stealing and the consequent destruction of the breeding places.

Perhaps the most interesting of the Baltic bird refuges are the Werder Islands, east of Zingst, Pomerania. They are private property and are cared for by a protective association to guard against egg stealing, as far as possible. A great variety of sea and also land birds breed here, and the place has been considered the most important Baltic refuge. Hiddensee, to the west of Rügen, is another bird colony, of considerable area as compared to the others.

The "Bund für Vogelschutz" maintains some fifty large and small refuges, most of them in Southern Germany, this association having its headquarters in Stuttgart; notably on the Federsee in Württemberg, several islands in the river Neckar, near Lauffen, and others.

The "Deutsch Ornithologische Gesellschaft" started an observatory for noting bird migration in 1900 at Rossiten, on the Kurische Nehrung, the narrow peninsula extending from Samland to Memel, East Prussia. This observatory has since been subsidized by the State, publishes extensive reports, and has solved many interesting problems of migration.

At Burg Seebach, Kreis Langensalza, Thuringia, Hans von Berlepsch, the well-known ornithologist and bird protector, founded and conducts the exemplary Experiment Station for Bird Protection; and we might also mention in the far east the Grosse Lauternsee, in East Prussia, and in the South the Wörthsee, not far from Munich.

In conclusion, it may be said that bird protection enjoys widespread interest and is promoted, as far as possible, among all classes

by means of lectures, literature, etc. At present it has great difficulties to contend with in counteracting the lawlessness and indifference, particularly of the lower classes. The breeding colonies are in great danger because of promiscuous and reckless egg stealing, which is the result of undernourishment among large portions of the people and the great scarcity of eggs at all times and in all places.

### Plant and Nature Protection in Germany

Plant protection may be carried out in two ways: either by the reserving and protecting of larger or smaller land areas upon which the plants to be protected are situated, or by the issuing of general regulations for the protection of specified plants in all areas under consideration whereby a special reservation of the land is not absolutely required. There are quite a considerable number of smaller reservations in Germany where plant life is protected and the rare specimens are classified as natural monuments.

A natural monument is now defined as a particularly characteristic formation of nature, especially when *in situ*, and which has remained entirely, or almost entirely, untouched by the progress of cultivation. To these belong areas of natural beauty or specific interest; formations of the earth which are of special interest for the knowledge of the history of the globe or of geology; botanical or zoological formations of interest for their rarity, variety, or other scientific value; certain species of plants and animals, particularly at the frontier lines of demarcation of their geographic or historic distribution; and individual plants prominent for their growth, shape and age. The necessity for protecting plant life, and the beauties of nature connected with it, has not always been sufficiently regarded in Germany, but gradually a widespread interest in preserving rare and threatened plants and landscapes arose; and in 1898, in the Prussian House of Delegates, Wetekamp, a delegate, pointed out the vital importance of definite steps for protection, and thus concentrated the attention of the parliament upon the matter.

Professor Conwentz, at that time Director of the West Prussian Provincial Museum in Danzig, published a memorial pointing out the endangering of primeval forests and demanding small reservations and an inventory of the notable trees and plants in the forests. Conwentz somewhat later published the first forest botanical memorandum for the province of West Prussia, upon request of the Department of Agriculture, and in connection therewith an epoch-

making treatise upon the whole subject of the protection of nature and natural monuments. A Prussian state bureau was then founded in Danzig in 1906, and transferred to Berlin in 1910. A few examples of individual plant dangers and protection are now in order.

*Eryngium maritimum* (Sea Holly), a plant growing along the coasts of the Baltic, has been torn out in such quantities for floristic uses as to be seriously endangered. Attention having been called to this fact, it has been placed upon the list of plants that should be protected and the plucking forbidden.

*Betula nana* (Dwarf Birch), a species that is common in Scandinavia, Finland and Russia, is found in only a very few places in Germany and is much endangered by the cultivation of the moors in which it grows. This plant is now protected everywhere, partly by the reservation of the places where it grows, e. g., in Neulinum, near the Drewenzerwald, and partly by protection of individual plants or groups.

*Cypripedium calceolus* (Venus Slipper), a beautiful orchid.

*Trapa natans*, a curious water plant, and others.

*Ilex aquifolium* (Holly), *Taxus baccata* (Yew), *Viscum album* (Mistletoe), are also protected in localities where they are rare or in danger of extermination, e. g., the yew in the Fies Busch, of 45.7 acres.

An interesting plant association is a salt marsh near Artern, Saxony, which was threatened by cultivation but has been preserved together with the typical growths of *Ruppia rostellata*, *Cladium Mariscus*, *Glaux maritima*, and others.

In Brandenburg, near the ruins of the Abbey of Chorin, the Plagefenn and See have been reserved as an absolute sanctuary by the State Forest Administration. This district comprises 417 acres, and consists of forest, moor and lake, constituting a typical Brandenburg landscape, with characteristic plant associations and formations, which has remained untouched by the hand of man since its inauguration in 1907.

A large tract of three to four German square miles, in the Lüneburger Heide, has been acquired by the Stuttgart "Verein Naturschutzpark." This district includes the Wilseder Berg, the highest elevation in the Northwest German plain, and represents a well-preserved and typical moor and heather country.

In the administrative district of Cassel, at Sababurg, the Reinhardswald of about 133 acres of forest, consisting of particularly fine old beeches and oaks, some of the latter having a circumference of

nineteen to twenty-nine feet, has been created a reservation by the State Forest Administration. Seventy-seven acres in the Hasbruch, and 121 acres in the Neuenburger Urwald (in Oldenburg), have been set aside and protected. These wood tracts are types of the very few remaining primeval forests in Germany, and the reservation is to remain untouched. Dead trees will not be removed and trunks are to lie where they fall. Some of the trees are very old and attain considerable dimensions, an oak in Hasbruch having a circumference of twenty-nine feet. In Württemberg, the Wildsee and its surroundings, in the Black Forest, have been acquired and protected in an area of 185 acres. Here the hand of man is also excluded as far as possible.

Moors which formerly covered large areas of land in Germany, notably in the North German plain, have been more and more threatened and endangered by amelioration. As the moors represent the most ancient types of vegetation, are in fact relicts of the ice age, the rare plants growing on them should be preserved as far as possible. Cultivation of all available land cannot be stopped, but the reservation of individual moors in various parts of the country has been recommended and carried out to a considerable extent.

Besides the Plagefenn, already mentioned, Zehlau, a moor of 5,829 acres in the district of Friedland, East Prussia, has been reserved for the purpose of protection. Moose are still found here; but most important is the fact that a primitive vegetation thrives here, and that the indigenous moor mosses are constantly spreading, so that moss growth can be admirably studied and observed, particularly as in most other moors the withdrawal of the moisture by processes of amelioration has caused them to cease spreading, to become dormant. In the Danzig district, 326 acres of moor have been reserved, and in several other sections of Prussia, in Bavaria, and in Württemberg, moors have been set aside and preserved.

### **Organizations and Administration**

The leading organization in Germany is the State Bureau for the Protection of Nature in Prussia. This bureau was founded in 1906 by the Ministry for Education, and was first established in Danzig. In 1910 it was removed to Berlin. Professor Hugo Conwentz, who has been a pioneer in everything pertaining to nature protection in Germany, has been at the head of the bureau since its foundation. Besides its activities in discovery, exploration, and pre-

servation of natural monuments in Prussia, this bureau advises as to and promotes legislation regarding reservations, bird refuges, etc. It is in constant touch with the authorities and with societies interested in these subjects. It also endeavors to raise the funds needed to purchase or to protect landscapes, etc. This bureau is situated in the former Botanical Museum Building, and has a number of spacious, well-lighted rooms for lectures, for the library, and for the use of the staff.

The library contains about 4,500 volumes of all the literature pertaining to nature protection and natural history, a complete collection of maps of all kinds, pictures, photographs and lantern slides. Very valuable is the bibliographical collection, which contains some 15,000 cards, with headings covering the whole field of the care of natural monuments, protection of nature, and kindred matters. It has been the endeavor of the bureau to collect all the foreign literature possible; and information and literature concerning the American National Parks and Monuments are particularly complete. The cards concerned with the most important publications contain an abbreviated synopsis of their contents.

In all parts of the country, that is, in all the Prussian provinces, committees for the care and protection of natural monuments have been established, and these keep in intimate touch with the central office. In all, there are 41 such committees in Prussia. They are presided over by some higher official, but the actual work is in the hands of an experienced and educated naturalist. These committees send out questionnaires concerning natural monuments in their territory, keep in touch with public opinion, provide public lectures and information, raise funds, issue publications, etc. The State Bureau holds weekly conferences where the whole field of interest is discussed, and since 1908 annual conferences lasting from one to two days have been held, in which delegates from the whole of Germany and even from foreign countries have been present.

The State Bureau also issues important publications, among which are *Beiträge zur Naturdenkmalflege* herausgegeben von H. Conwentz, vols. I-VII (Gebrüder Bornträger, Berlin); *Naturdenkmäler, Vorträge und Aufsätze*, Nos. 1-22 (Gebrüder Bornträger, Berlin); being popular discussions of various themes of nature protection intended to awaken general interest and understanding for the aims of nature protection; and also a very good English work, *The Care of Natural Monuments with Special Refer-*

ence to Great Britain and Germany, by H. Conwentz, Prussian State Commissioner for the Care of Natural Monuments (Cambridge University Press, 1909).

As regards the organizations in the non-Prussian German States, Bavaria possesses a "Landesausschuss für Naturdenkmalpflege" (National Committee for the Care of Natural Monuments), under the collaboration of the Ministry, and connected with it are local committees in different parts of the country.

Saxony has a "Landesverein Sächsischer Heimatschutz" (National Association for the Protection of Saxon Landscapes), with a section for "Naturschutz," and also aided by the Ministry.

Württemberg has a "Landesausschuss für Natur und Heimatschutz," and Baden a "Landesverein für Naturkunde und Naturschutz," each under the Minister of Education; and besides these there are various private associations, such as the very energetic "Verein Naturschutzbau" of Stuttgart. It must be remembered, however, that only the Prussian State Bureau is a regular official institution with official authority and functions. The other organizations enjoy the aid and encouragement of the government, but they are not official.

### Publications

A list of the publications of the State Bureau follows, as these are the most important among a very large literature concerned directly or indirectly with nature protection.

#### *Beiträge zur Naturdenkmalpflege*

These *Contributions to the Care of Natural Monuments* comprise the activities of the State Bureau, reports of conferences, and other papers regarding care of natural monuments. Primarily intended for scientific circles, administrative officials, and friends of nature, they pursue the object of encouraging the exploration, care and preservation of natural monuments in professional circles and beyond.

Band I. Berichte über die Staatliche Naturdenkmalpflege, 1906-1909 sowie über die 1. und 2. Konferenz. Die Naturdenkmalpflege in Dänemark. Reiterate über das Gesetz gegen die Verunstaltung von Ortschaften und landschaftlich hervorra-

Vol. I. Reports of State Care of Natural Monuments, 1906-1909, and of the 1st and 2nd annual conferences. Care of Natural Monuments in Denmark. Discussion of the law against the disfigurement of towns and villages or of places of prominent

genden Gegenden 1907 und über Naturschutzparke. Anliegend einschlägige Gesetze, Erlasse und Verordnungen. Mit 36 Textabbildungen und 1 Tafel.

Band II. Die erraticischen Blöcke im Regierungsbezirke Danzig mit botanischen Beiträgen. Berichte über die Eröffnung der Staatlichen Stelle in Berlin und über die 3. und 4. Konferenz. Erhebungen über das Vorkommen des Schwarzstorch und Fischreihers in Preussen. Geschichte der Naturdenkmalpflege in Schweden, Schultz der Naturdenkmäler in Norwegen u. a. m. Mit 30 Textabbildungen.

Band III. Das Plagefenn bei Chorin. Ergebnisse der Durchforschung eines Naturschutzgebietes der preussischen Forstverwaltung. Mit 25 Textabbildungen und 3 Tafeln.

Band IV. Bericht über die 5. und 6. Konferenz. Denkschrift über den Schutz der Natur Spitzbergens. Die geologischen Naturdenkmäler des Riesengebirges. Bericht über die Naturschutzsitzung beim russischen Naturforscherkongress in Tiflis, 1913, u. a. m. Mit 55 Textabbildungen und 2 Karten.

Band V. Die Pflanzenschutzgebiete in Bayern. Bericht über die 7. Konferenz. Denkschrift über die Notwendigkeit der Schaffung von Moorschutzgebieten. Das staatliche Vogelschutzgebiet an der alten Weichselmündung. Wandlungen der schlesischen Tierwelt. Mit 18 Textabbildungen.

Band VI. Bericht über die 8. und 9. Conferenz. Referate über die

scenic beauty 1907, and of Natural Parks. Included are laws concerning the above topics, decrees and regulations. With 36 illustrations in the text and 1 plate.

Vol. II. The Erratic Blocks in the administrative district of Danzig, with botanical contributions. Reports of the inauguration of the State Bureau in Berlin and of the 3rd and 4th annual conferences. Investigations as to the occurring of the Black Stork [*Ciconia nigra* L.] and the Common Heron [*Ardea cinerea*] in Prussia. History of the Care of Natural Monuments in Sweden, Protection of Natural Monuments in Norway, etc., with 30 text illustrations.

Vol. III. The Plagefenn near Chorin. Results of the exploration of a nature reservation of the Prussian Forestry Administration. With 25 text illustrations and 3 plates.

Vol. IV. Reports of the 5th and 6th annual conferences. Memorial regarding the protection of nature in Spitzbergen. The geological natural monuments of the Riesengebirge. Report of the Nature-protection Session at the Russian Naturalists Congress, in Tiflis, 1913, etc. With 55 text illustrations and 2 maps.

Vol. V. Plant reservations in Bavaria. Report of the 7th annual conference. Memorial regarding the "Importance of the Creation of Moor Reservations." The State Bird Refuge at the old Vistula mouth. Changes in Silesian animal life. With 18 text illustrations.

Vol. VI. Reports of the 8th and 9th annual conferences. Discussions

Seefelder bei Reinerz. Bericht über die Falz-Fein Sitzung in der Staatalichen Stelle für Naturdenkmalpflege in Preussen. Zur Reform des Vogelschutzrechts. Sicherung von Naturdenkmälern bei der bevorstehenden Kultivierung der Oedländereien. Ursprüngliches in der warmblütigen Tierwelt der Kriegsgebiete. Mit 10 Textabbildungen.

Band VII. Das Recht der Naturdenkmalpflege in Preussen. Dr. B. Wolf.

of the so-called Seefelder, at Reinerz, Silesia. Report of the Falz-Fein Session held in the State Bureau for the Care of Natural Monuments in Prussia. Regarding the reform of bird protection laws. Safeguarding natural monuments during the proposed amelioration of uncultivated tracts. Primitive peculiarities of warm-blooded animals and birds in the war regions. With 10 text figures.

Vol. VII. Laws and Regulations for the Care of Natural Monuments in Prussia. By Dr. B. Wolf.

### *Naturdenkmäler, Vorträge und Aufsätze*

These pamphlets discuss individual themes of nature protection in popular form, and are intended to awaken the interest and understanding for the aims of nature protection in the public in general. The contents of the twenty-two booklets or pamphlets which have appeared are as follows:

1. Richtlinien zur Untersuchung der Pflanzen und Tierwelt besonders in Naturschutzgebieten.
2. Die Raubvögel als Naturdenkmäler.
3. Unsere erratischen Blöcke.
4. Zur rechtlichen Sicherung von Naturdenkmälern.
5. Vogelschutzgebiete an deutschen Meeresküsten.
6. Naturdenkmalpflege und wissenschaftliche Botanik.
7. Das Naturschutzgebiet bei Sababurg im Reinhardswald.
8. Schultz der blütenlosen Pflanzen.
- 9, 10. Schultz der geologischen Naturdenkmäler.
11. Schutz den heimischen Kriechtieren und Lurchen.
12. Der Drausen bei Elbing, eine Stätte ursprünglicher Natur.
13. Die Hülse oder Stechpalme, ein Naturdenkmal.

1. Methods of Investigating Plant and Animal Life, Especially in Nature Reservations.
2. Rapacious Birds as Natural Monuments.
3. Our Erratic Blocks.
4. Legal Safeguarding of Natural Monuments.
5. Bird Reservations on German Sea Coasts.
6. Care of Natural Monuments and Scientific Botany.
7. The Sababurg Reservation in the Reinhardswald.
8. Protection for Flowerless Plants.
- 9, 10. Protection for Geological Nature Reservations.
11. Protection for Native Reptiles and Batrachians.
12. The Drausen, near Elbing, a Place of Primitive Nature.
13. Holly or Thorn Palm [*Ilex aquifolium*] as a Natural Monument.

14, 15. Schwindende Vogelarten in Deutschland.  
 16, 17. Die Mistel.  
 18, 19. Das westfälische Industriegebiet und die Erhaltung der Natur.  
 20. Die Zehlau, ein staatlich geschütztes Hochmoor.  
 21. Naturschutz und Verkehr.  
 22. Die Nationalparke der Vereinigten Staaten.

H. Conwentz: Merkbuch für Naturdenkmalpflege und verwandte Bestrebungen, 1918. (Gebrüder Bornträger, Berlin).

14, 15. Disappearing Bird Species in Germany.  
 16, 17. The Mistletoe.  
 18, 19. The Westphalian Industrial Region and the Preservation of Nature.  
 20. Zehlau, a Moor Protected by the State.  
 21. Nature Protection and Traffic.  
 22. The National Parks in the United States.

H. Conwentz: Suggestions for the Care of Natural Monuments and Kindred Projects. 1918. (Bornträger Brothers. Berlin).

## WILD LIFE AND DEMOCRACY

"Above all, the people, as a whole, should keep steadily in mind the fact that the preservation of both game and lesser wild life — by wise general laws, by the prohibition of the commercialism which destroys whole species for the profit of a few individuals, and by the creation of national reserves for wild life — is essentially a democratic movement. It is a movement in the interest of the average citizen, and especially in the interest of the man of small means. Wealthy men can keep private game preserves and private parks in which they can see all kinds of strange and beautiful creatures; but the ordinary men and women, and especially those of small means, can enjoy the loveliness and the wonder of nature, and can revel in the sight of beautiful birds, only on terms that will permit their fellow-citizens the like enjoyment. In other words, the people as a whole through the government, must protect wild life, if the people as a whole are to enjoy it. This applies to game also."

THEODORE ROOSEVELT and EDMUND HELLER.

*Life Histories of African Game Animals.*

Vol. I, pp. 155-156, 1914.

## CURRENT STATION NOTES

### Acknowledgments

In this first number of the official serial publications of the Roosevelt Wild Life Forest Experiment Station, opportunity is afforded to thank those who have been friendly to the cause for which the Station stands and who have, in various ways, aided in advancing a movement for wild life research which was first championed by Theodore Roosevelt himself. Friends of Roosevelt and friends of the College have generously combined in supporting these plans. The Roosevelt family, the Trustees of the College of Forestry, our friends in the Legislature, the former Dean, Dr. Hugh P. Baker, the present Dean, Franklin F. Moon, and our Honorary Advisory Council, have all responded generously. Gratitude and acknowledgment is due the various authors, editors, and others who have contributed articles or have given permission to publish their papers; including Dr. George Bird Grinnell, Sir Harry H. Johnston, Dr. Gifford Pinchot, Mr. Edmund Heller, Mrs. George W. Perkins (for permission to publish the paper by her husband), Dr. T. G. Ahrens, and finally, to Mr. Ernest Thompson Seton for contributing the excellent and appropriate cover design for the *Bulletin*.

The College and the Roosevelt Station were greatly honored on October 11, by a visit from Mrs. Corinne Roosevelt Robinson, Colonel Roosevelt's sister. Her enthusiastic approval of the purposes of this Memorial and her recognition of its appropriateness was very gratifying indeed. Her interest was further shown by her accepting membership on the Honorary Advisory Council, and by a contribution to our fund for big game research in the Yellowstone. Mrs. Robinson's intimate account of Roosevelt's boyhood, as told in her book, *My Brother Theodore Roosevelt*, shows how clearly his interest in the living outdoor world was innate, and how natural it was that as a mature man he should comprehend the full meaning of conservation and be able to do so much for forestry and wild life.

### Investigations in New York State, Summer of 1921

Through cooperation with the Commissioners of the Allegany State Park, of whom Hon. A. T. Fancher is Chairman, the Roosevelt Station has had a field party make a survey of the conditions of

wild life in this newly established State Park, which already contains 7,000 acres. Mr. Aretas A. Saunders, Field Ornithologist for the Station, has made a preliminary study and report on the birds. Prof. T. L. Hankinson, Station Ichthyologist, aided by Mr. W. A. Dence, Assistant, has made a study of the fishes of the region.

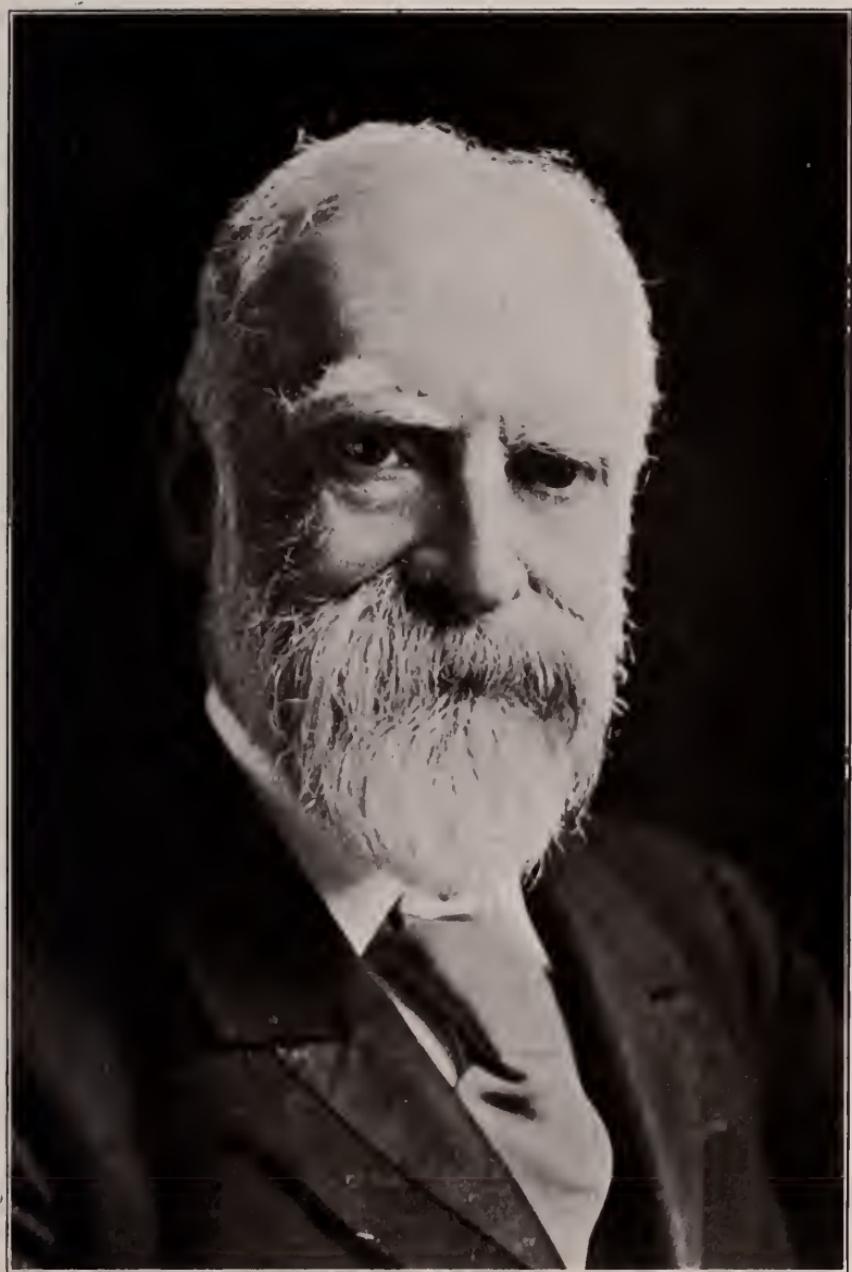
This same survey party extended its investigations of the fishes of Erie County, begun in 1920, with Buffalo as headquarters. This survey was made in cooperation with the Erie County Society for the Protection of Birds, Fish, and Game, of which Mr. J. C. Brennan is President, and the Buffalo Society of Natural Sciences, of which Mr. Chauncey J. Hamlin is President. Several local sportsmen gave very substantial aid in this survey.

Through the gifts of certain Trustees of the College of Forestry, an investigation has been made of the status of the beaver problem in Herkimer and Hamilton Counties in the Adirondacks, where the prolonged closed season on beaver has led to their excessive multiplication. This study has been made for the Station by Dr. Charles E. Johnson of the University of Kansas, who has been materially assisted by the officers of the State Conservation Commission, particularly by Commissioner Ellis J. Staley, Mr. Llewellyn Legge, Chief, Division of Fish and Game, and W. G. Howard, Assistant Superintendent of State Forests. He was also given much valuable assistance by the Forest Rangers.

### **Wild Life Research in Yellowstone National Park**

Although the Station was founded by New York State, our activities are not limited solely to the State. Through the foresight of the Board of Trustees of the College of Forestry, our Charter provides that gifts and cooperation, when advantageous to the aims of the College, may be accepted, and research may be conducted wherever favorable. Through this wise provision not only are the College and the Station obligated to conduct statewide investigations on forest wild life, but as well are permitted to conduct wild life research in other regions.

Friends of the Roosevelt Station have sought its assistance and generously provided funds for conducting wild life research in our greatest wild life preserve — Yellowstone National Park. Through Mr. Howard H. Hays, President of the Yellowstone Park Camps Company, the Roosevelt Station has been able, with the approval and cooperation of Director Stephen T. Mather and Superintendent



VISCOUNT BRYCE

Member of Honorary Advisory Council

Horace M. Albright, to put a field party at work on important wild life problems in the Park.

The food of the stream fishes is being investigated by Dr. Richard A. Muttkowski of the University of Idaho, and Dr. Gilbert M. Smith of the University of Wisconsin. These are fundamental studies underlying the maintenance of the fish in the Park, a problem never having been studied before in this region. With the great increase of Park visitors and the excessive demand for trout fishing, the problem of maintaining the supply has become a very serious one. Mr. Edward R. Warren, the well-known authority on Colorado mammals, is making a detailed study of the beaver ponds and dams, which have been carefully surveyed and mapped. He has been assisted by E. J. Spackman, Jr. Mr. Edmund Heller, the eminent field naturalist who accompanied Roosevelt on his African expedition, is conducting an investigation of the large mammals of the Park, giving special attention to photographic records. He has been very materially assisted by a grant from two friends of the Station.

Governor Robert D. Carey, of Wyoming, an enthusiastic admirer of Roosevelt, showed his interest in the work of the Station by cooperating with Superintendent Horace M. Albright in aiding the Director to visit the Teton National Forest, south of the Park, the Two Ocean Pass region, and the upper waters of the Yellowstone River. The first-hand knowledge gained by this trip, as well as that secured in other parts of the Park, will be of special value in planning for future investigations in this region. Here occurs the Shiras Moose named in honor of Dr. George Shiras, 3rd, a member of our Honorary Advisory Council who has made extensive field studies of this animal.

The preceding statement indicates only the amount of substantial gifts and assistance which have been utilized, but does not include all that has been available to the Station. This proffered assistance, which for one reason or another could not be utilized, has nevertheless been much appreciated. Thus Mr. W. C. Gregg of Hackensack, N. J., volunteered to take a Station representative on his exploration trip through the southern part of the Park; and Mr. Hays offered facilities of which full use was not made.

The Assistant Director, Alvin G. Whitney, was given, during the past summer, a special leave of absence to conduct the "Forest and Trail Camp" for young men and boys in the Yellowstone National Park. His substitute during this absence was Mr. Aretas A.

Saunders. The fundamental idea of this camp-school is that the natural history resources of such a wonderful region as the Park should be made the basis for a unique educational experience which is believed to be vastly superior to the conventional games and athletic sports dominating so much of the activities of summer camps. It is an excellent practical demonstration of the value of nature guiding in the best sense of the word.

The facilities of this Camp were generously made available to the field party of the Station (see p. 38), and this cooperation was greatly appreciated by the Station and the individual workers. The presence of such a member on our staff and the familiarity with conditions in the Park which Prof. and Mrs. Whitney possessed, was a leading factor in developing our cooperative Park plans and very naturally is keenly appreciated.

### **Publications**

The results of the foregoing studies will in due time be published. Many causes have contributed in delaying the publication of the earlier investigations of the Station. The prospects now indicate an early publication of manuscripts which have accumulated during several years. The Station has been able to secure the valuable services of Mr. Ernest Ingersoll for assistance in this editorial work.

### **Wild Life Library**

The establishment of a wild life library is one of the distinctive features of this Memorial Station. This library is intended to include not only books, magazines, and other publications but as well manuscripts, notebooks, photographs and all forms of valuable data on forest wild life. Already a valuable nucleus of wild life photographs and negatives have been accumulated, and the field workers of the past season have made many important additions to this series. There is a real need for repositories of this sort where, under proper care, the materials will be available for use by the public. In addition to valuable books purchased, other publications, including books, magazines and pamphlets have been received as gifts, so that this library is constantly growing.

### **Station Staff Changes**

The Station regrets very much to announce the resignation of Thomas L. Hankinson, Ichthyologist of the Station. His work began with the College in 1915 and continued each summer on a tem-

porary appointment until January 1, 1919, when he became Ichthyologist on the Station staff. His resignation took effect October 1, 1921. While engaged in fish surveys he has, working with others, made studies of the fish of Oneida Lake, of the Palisades Interstate Park region, and the Allegany State Park; and through his interest the Erie County fish survey was initiated. He is a very competent field naturalist, whose enthusiasm for studying the life history and habits of fish has been a life-long passion. It is through the Station having on its staff such a specialist that it has been able to cooperate with various other State agencies and local organizations in its various fish surveys. He leaves the Station with its best wishes for his future success.

The Station is fortunate in being able to announce at this time that Dr. William Converse Kendall, Scientific Assistant and Ichthyologist of the United States Bureau of Fisheries at Washington, D. C., has accepted the position as Ichthyologist made vacant by the resignation of Mr. Hankinson. Dr. Kendall cooperated with the Station, through the U. S. Bureau of Fisheries, in our study of the fishes of the Palisades Interstate Park. He has devoted years to the study of trout and is our leading authority in America on the Salmonidae. His well-known paper, *The Rangeley Lakes, Maine; with Special Reference to the Habits of the Fishes, Fish Culture and Angling*, is one of the most important studies of its kind ever published in this country, and is only one of a large number of interesting and important papers published by him. The Station is very fortunate in securing such a competent man.

### The Fifth Anniversary

The twenty-ninth of December is the fifth anniversary of the presentation of the original plans for forest wild life research to Colonel Roosevelt, and at that time they received his cordial approval. However, on account of the War, these plans were not developed until after his death, when they became the basis for this Memorial Station, in May, 1919. Since then investigations have been conducted on forest wild life in the Adirondacks, in the Palisades Interstate Park, in the Allegany State Park, and during the past summer investigations were started in the Yellowstone National Park. Thus several of the most important features of the original plans are already under way.

# THE ROOSEVELT WILD LIFE MEMORIAL

## As a State Memorial

The State of New York is the trustee of this wild life Memorial to Theodore Roosevelt. The New York State College of Forestry at Syracuse is a State institution supported solely by State funds, and the Roosevelt Wild Life Forest Experiment Station is a part of this institution. The Trustees are State officials. A legislative mandate instructed them as follows:

"To establish and conduct an experimental station to be known as 'Roosevelt Wild Life Forest Experiment Station,' in which there shall be maintained records of the results of the experiments and investigations made and research work accomplished; also a library of works, publications, papers and data having to do with wild life, together with means for practical illustration and demonstration, which library shall, at all reasonable hours, be open to the public." [Laws of New York, chapter 536. Became a law May 10, 1919.]

## As a General Memorial

While this Memorial Station was founded by New York State, its functions are not limited solely to the State. The Trustees are further authorized to cooperate with other agencies, so that the work is by no means limited to the boundaries of the State or by State funds. Provision for this has been made by the law as follows:

"To enter into any contract necessary or appropriate for carrying out any of the purposes or objects of the College, including such as shall involve cooperation with any person, corporation or association or any department of the government of the State of New York or of the United States in laboratory, experimental, investigative or research work, and the acceptance from such person, corporation, association, or department of the State or Federal government of gifts or contributions of money, expert service, labor, materials, apparatus, appliances or other property in connection therewith." [Laws of New York, chapter 42. Became a law March 7, 1918.]

By these laws the Empire State has made provision to conduct forest wild life research upon a comprehensive basis, and on a plan as broad as that approved by Theodore Roosevelt himself.

## Form of Bequest to the Roosevelt Wild Life Memorial

I hereby give and bequeath to the Roosevelt Wild Life Forest Experiment Station of The New York State College of Forestry at Syracuse, for wild life research, library, and for publication, the sum of ..... or the following books, lands, etc.





